

JMPS Combat 1 Senior Leadership Status Review

23 July 2002

Senior Leadership Review

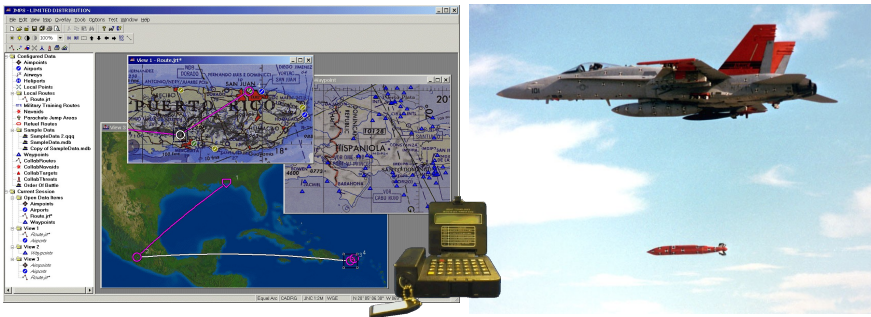
JC1 Topics

- **Overview & Cost Performance**
- **Development Status**
- **Integration and Dependencies with JV1**
- **Contract Actions on Deck**
- **Risk Review**

JMPS Combat One 33 Month Program

Program Description

Description: JMPS Combat One will transition the Tactical Automated Mission Planning System (TAMPS) off of the Navy fleet. It will add PGM Planning capability to JMPS Version 1, enable mission planning in a networked, server environment as well as a standalone environment, enable Walkaway Mission Planning, interface with critical data sources (weather, threat data, Strike Planning Folder), and provide GPS functions needed to plan and prosecute Combat Missions.



• Mission Statement

- Evolve world-class joint mission planning capabilities to support the war- fighter today and support Joint Vision 2010

• Major Deliverable

- JMPS Combat 1.0 : Combat Planning

• Technical Objectives

- Replace Navy's TAMPS system by 3/30/04 (IOC)
- Support Air Force PGM Planning with GPS functions and Route Linking

• Northrop Grumman:

- Client/Server, Walkaway and Mission Binder
- Route Linking, Water Pages, PGMPs Study

• Major Subcontractors:

- **BAE SYSTEMS**
 - Interface to weather parametric data
 - Interface to Precision Targeting Workstation (PTW)
 - Interface to Strike Planning Folder (SPF)
- **Boeing**
 - Enhanced GPS Almanac capability
 - JTIDS initialization

• GFI: JMPS Version 1, GPS Prediction*, Crypto

Keys, DMS

Senior Leadership Review
JMPS Combat One
Jill Dawes 7/23/02

- Mission Binder Repository

• Contract:

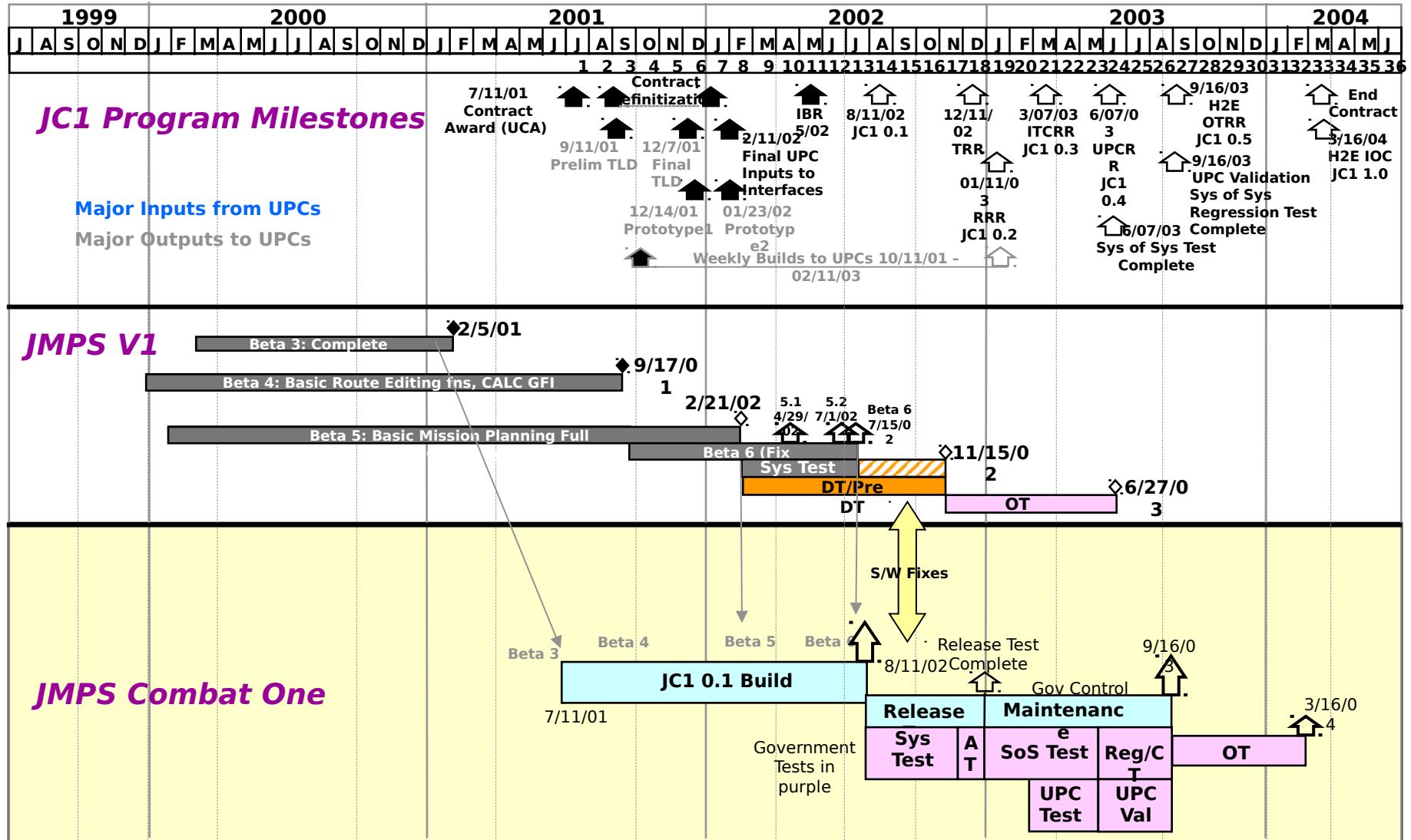
- Value: \$20.6M
- Type: CPIF
- Period of Performance: 7/11/2001 - 3/16/2004
- Customer: NAVAIR/PMA-233 and ESC/ACU
- JC1 SOW Revision 2, 12/19/2001
- Elaboration Use Cases Version 1.03, 11/2/2001
- Last contract modification: P0006

*Letter of intent received to delete GPS Prediction

7/23/02

JC1 Program Master Schedule

Baseline Schedule as of 7/23/02. JV1 Slip Discussed Separately.



JMPS Combat 1 Schedule Summary

Component Development Baseline Schedule & Critical Path

Key Dates:

System Requirements / Inception

09/11/01

Software Requirements / Elaboration 1

01/11/01

Design / Elaboration 2

03/11/02

Code and Unit Test

07/11/02

Fully Funct'l Delivery, Entry into Release Test JC1 0.1:

08/11/02

Test Readiness Review, Start of FQT

12/11/02

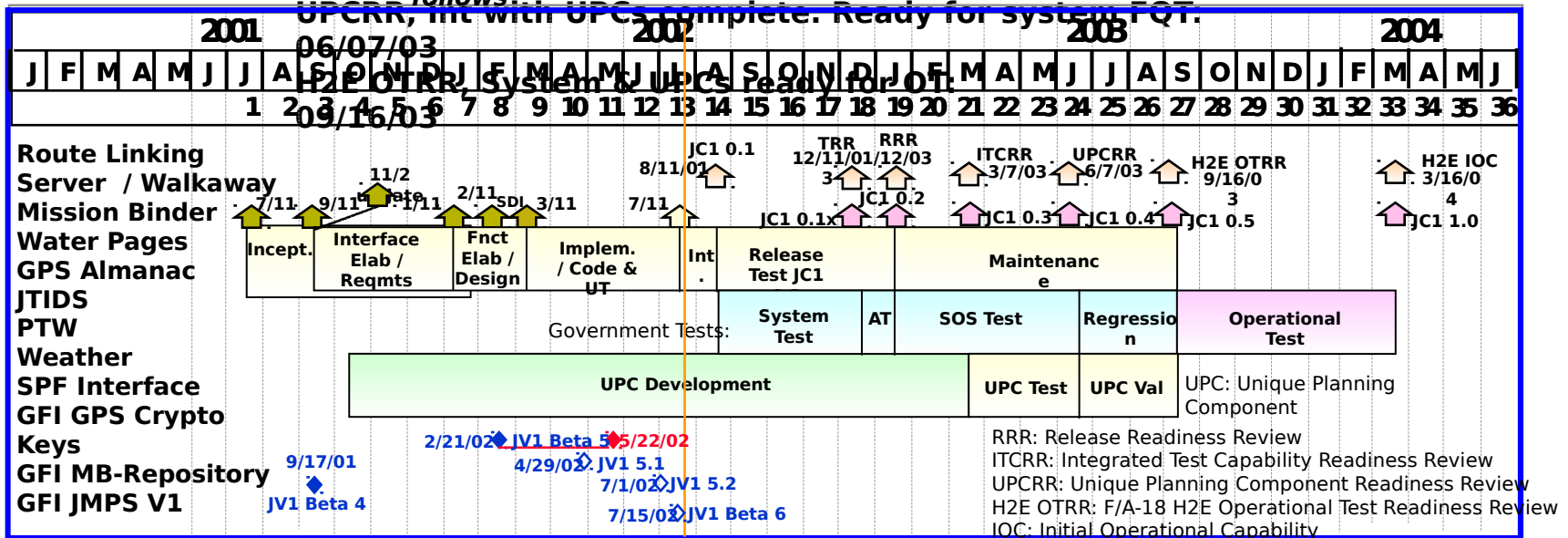
Release Test Complete, Deliver JC1 0.2:

01/12/03

ITCRR, Completion of Gov-directed fixes:

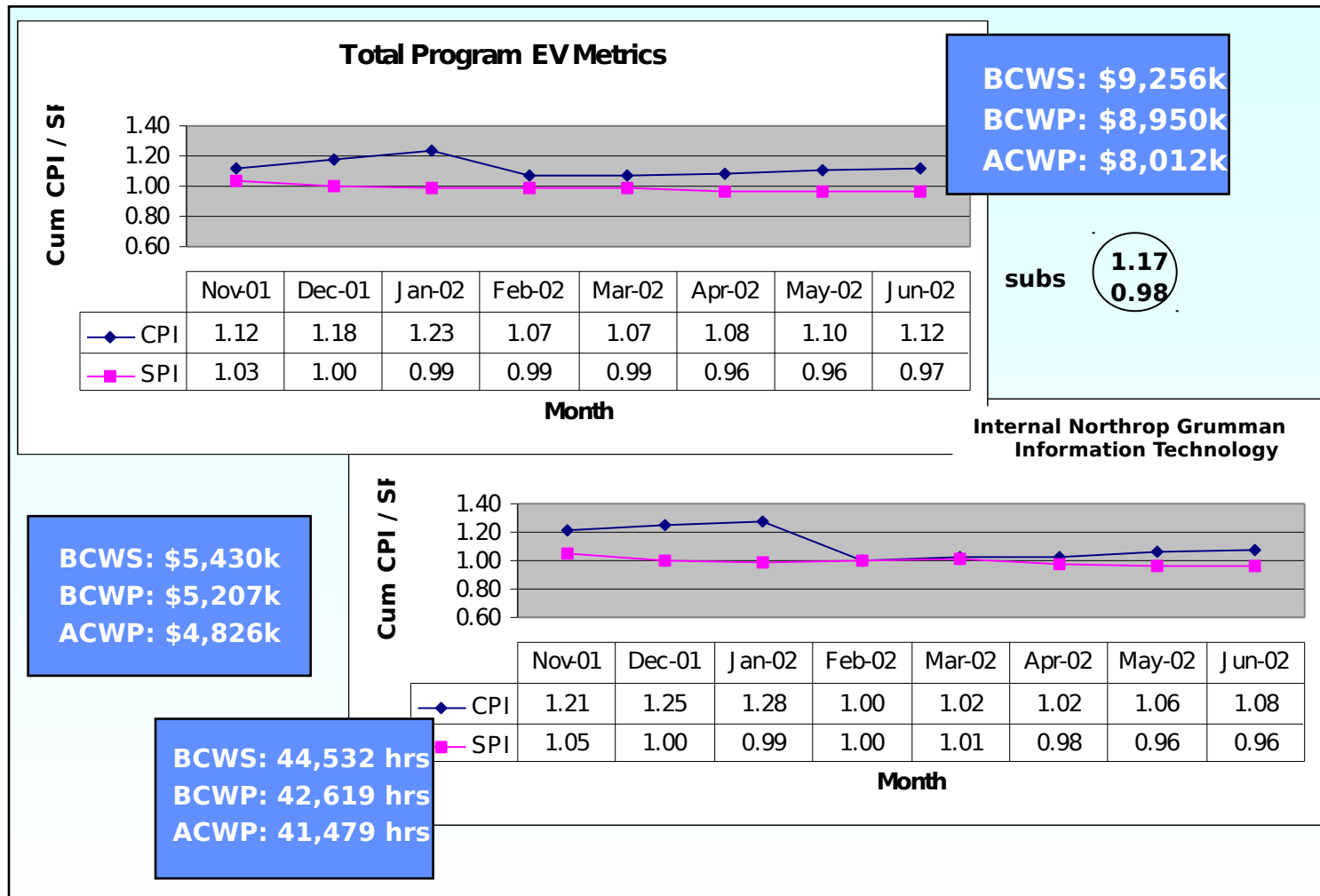
03/07/03 *JV1 slip impact and workaround discussion*

UPCRR, Int with UPCs complete. Ready for system FQT.



Northrop Grumman JC1 Program Health is Good

June 2002 Earned Value Cost and Schedule Metrics



JMPS Combat 1 Contract Items on Track to Plan

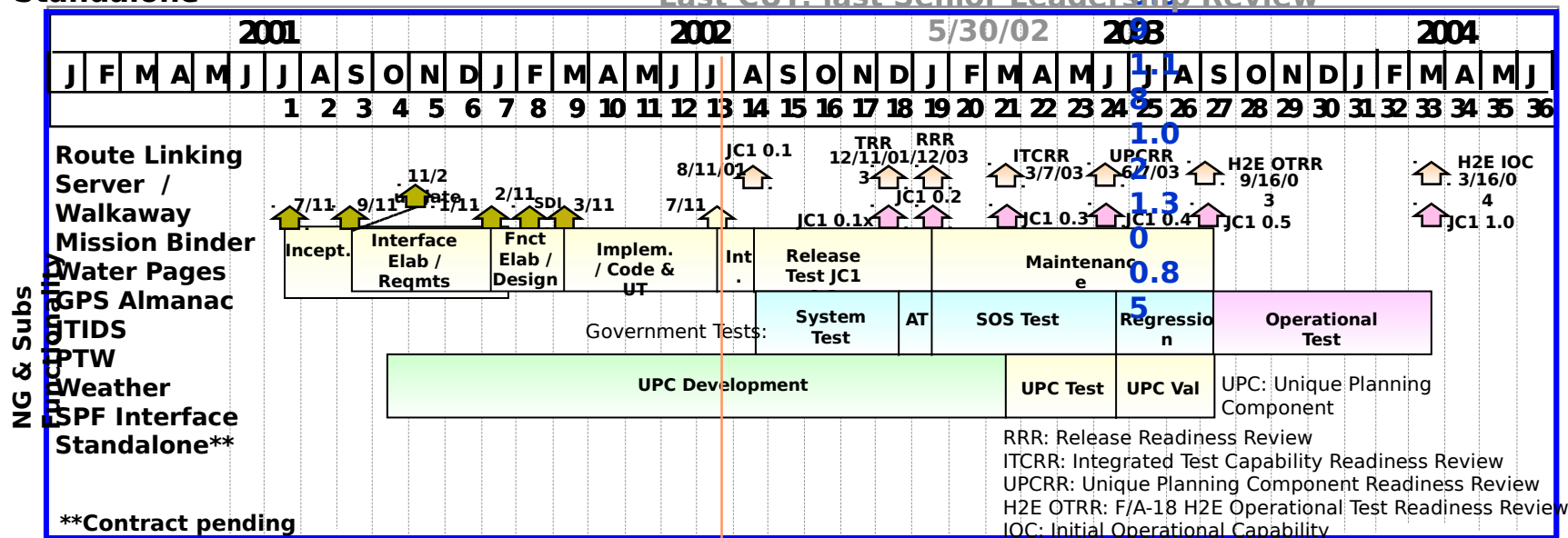
Northrop Grumman and Subcontractors on track to meet 8/11 and RRR Goals

Component Code and Unit Test Percent Complete as of

Component	Inception	Elab 1	Elab 2	Last CUT	Current CUT	SPI	CPI	Integration	Release Test	Maint
Route Linking	100	100	100	56	96	0.96	1.6	35	0	0
Server /	100	100	100	72	99	0.99	5	45	0	0
Walkaway	100	100	100	35	86	0.87	1.0	5	0	0
Mission Binder	100	100	100	44	99	1.06	9	35	0	0
Water Pages	100	100	100	60	100	1.00	0.9	53	0	0
GPS Almanac	100	100	100	68	96	0.97	5	54	0	0
JTIDS	100	100	100	100	100	1.00	1.0	100	0	0
PTW	100	100	100	100	100	1.00	3	100	0	0
Weather	100	100	100	100	100	1.00	1.0	100	0	0
SPF Interface	100	100	70	34	80	0.93	7	0	0	0

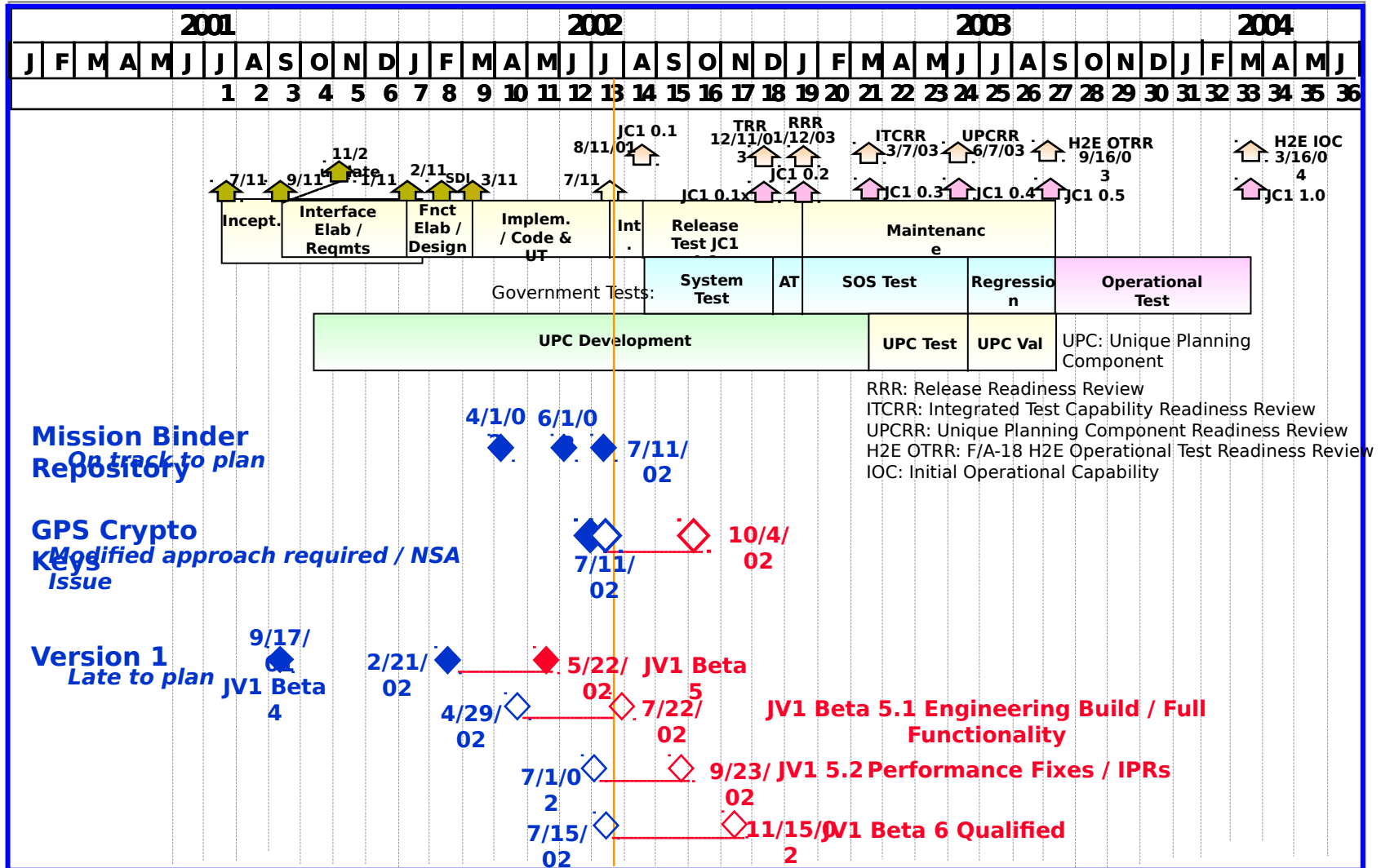
Standalone**

Last CUT: last Senior Leadership Review

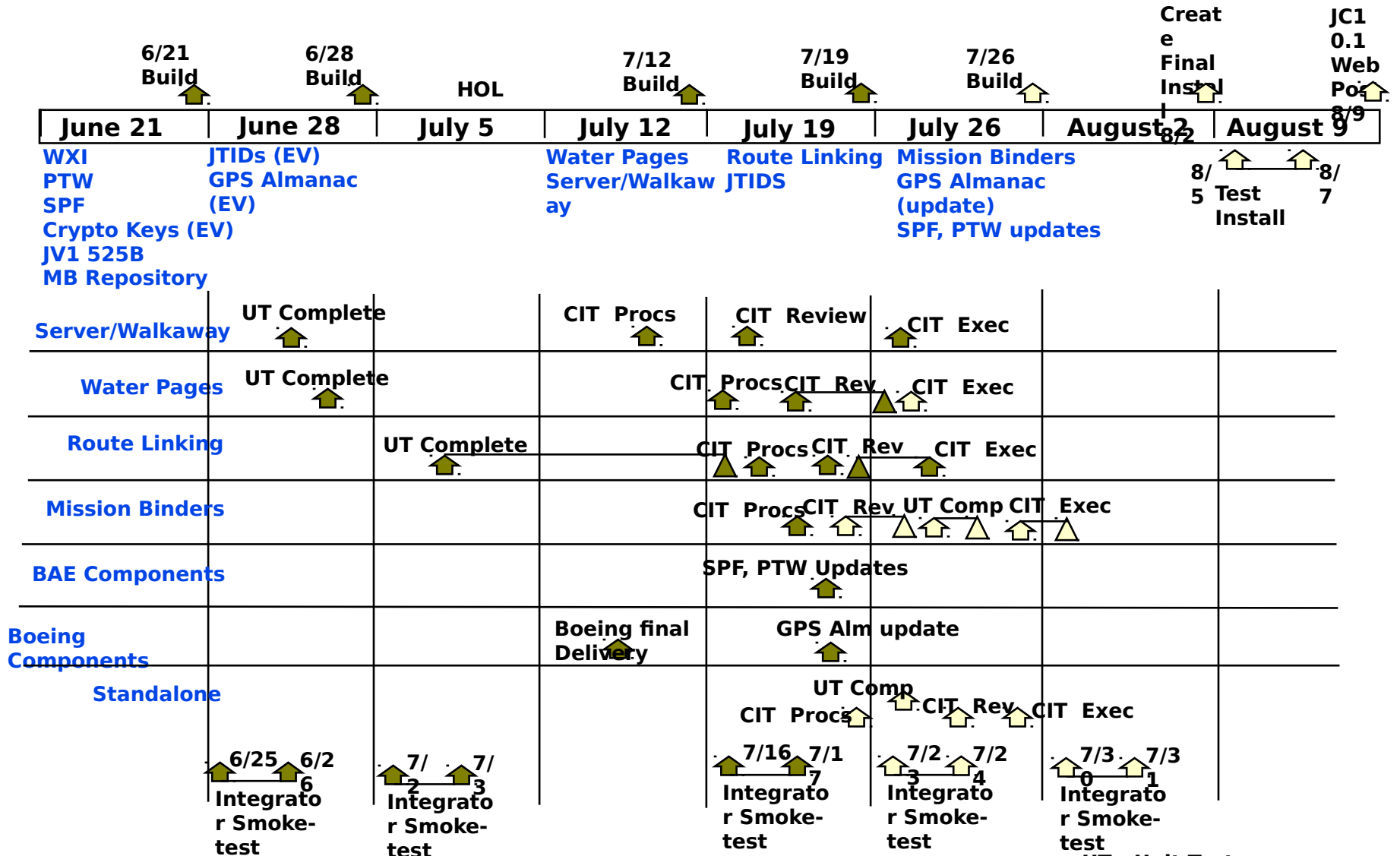


JMPS Combat 1 GFI

GFI Crypto Keys and Version 1 are schedule challenges



JC1 0.1 Build Timeline



UT : Unit Test
CIT: Component Integration Test

Aug 9 - JC1 0.1 Engineering Build

- **Component Unit Tests completed**
- **Component Integration Test software requirements demonstrations completed (shortfalls documented)**
 - **Northrop Grumman and subcontractor SDI requirements verified and documentation provided (verification that requirements are coded)**
 - **Available GFI test documentation will be provided**
- **Integration smoke-tests completed on all functional areas**
- **Draft Software Test Plan**
 - **EUC VCRM available**
- **JC1 0.1 Software Version Description**
- **JC1 0.1 Interface Control Document**
- **JC1 0.1 Build and Install complete and available for posting to the China Lake web site**
- **JC1 0.1 CD available**

Weekly Build Component Tracking

J C1 Build	115	141	149	152	162	170	182	193	198
Incorporates J V1 Build	463	494	494	494	519	524	525	525b	525b
J C1 Architectural Components	1/23/02	3/28/02	4/11/02	4/17/02	5/16/02	5/30/02	6/20/02	7/11/02	7/18/02
GPS Almanac Update									
GPS Crypto Key									
J TIDS Initialization	P				NC	NC	NC		CIT
Link Routes	P								UT
Mission Binders									
Restore Mission Binder									
Create or Open Mission Binder	P	P							
User/UPC Interacts with Mission Binder	P	P							
Backup or Archive Mission Binder									
Mission Binder Repository									
PTW Imagery Interface	P				NC			CIT	CIT
Server/Walkaway									
Maintain J MPS Network Data Source Configuration								UT	UT
Start J MPS								UT	UT
Connect to J MPS Network	P							UT	UT
Disconnect from J MPS Network	P							UT	UT
SPF (Strike Planning Folder) Interface					NC			CIT	CIT
Stand Alone (Import/Export)									
Import Generic File									
Export Generic File									
Import Mission Binders									
Export Mission Binders									
Import Order of Battle									
Export Order of Battle									
Import Wizard									
Export Wizard									
Export Weather									
Weather Cache Archiver									
Water Pages									
Create Water Pages	P		NC	NC	NC			CIT	UT
Use Water Pages								CIT	CIT
WXI (Weather) Interface	P				NC			CIT	CIT

KEY

CIT
UT
P
NC

Component Integration Test Complete (J C1 Components Only)
 Unit Test Complete (J C1 Components Only)
 Component Code Complete
 Partial Functionality
 No Functionality
 Prototype Functionality (J C1 Components Only)
 No Change Since Last Build (J C1 Components Only)

Weekly Build Component Tracking

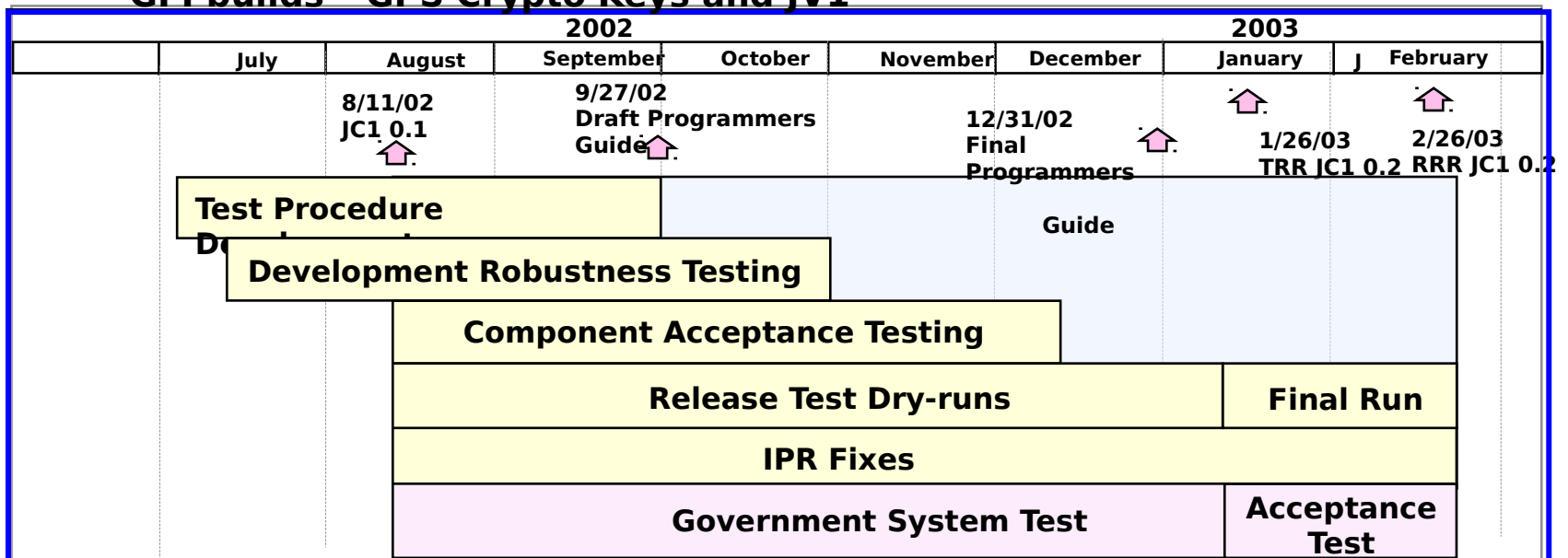
	J C1 Build	115	141	149	152	162	170	182	193	198
Incorporates J V1 Build	463	494	494	494	519	524	525	525b	525b	
J V1 Architectural Components										
Framework										
Session Manager										
View Manager										
View Selector										
Explorer										
Base VPS										
Abstract Data Object										
Abstract Data Agent										
Error Handler										
User Preferences										
Administrate User Settings Manager										
Document Shared Dialog										
Data Controller										
Access Structured Storage										
Common Controls										
Symbology										
Route Object										
Route VPS										
Data Filter										
Record Set										
Pedigree										
Config Manager										
Route Editor										
Graphical Route Editor										
Serve Threat Parameters										
Serve MIDB from GCCS										
CMF Doghouse Template Editor										
Route Object Replication										
Collaboration Engine										
2D Mission Rehearsal										
Scale Bar VPS										
Vertical Profiles Container										
Drawing Utilities										
CMF Graphical View										
Admin Data Mgr										
Briefings										
Divide Route										
Quantity Object										
Location Object										
JMPS Audit Service										
Audit Configuration										
Audit Monitor and Logon Recording										
Security Utilities										
Privilege										
Error Handler Extensions Ph. 2										
GPS Almanac										
Geo Utilities										
Order of Battle VPS										

	J C1 Build	115	141	149	152	162	170	182	193	198
Incorporates J V1 Build	463	494	494	494	519	524	525	525b	525b	
J V1 Architectural Components										
Access Order of Battle User/MIDB										
Access Threat Parameters										
Data Order of Battle										
Data Threat Parameters										
Radar Terrain Masking Utility										
Terrain Calculations										
Math Utilities Module										
FPM Wrap										
Database Search Wizard										
CALC										
CRD Import/Export Tool										
Default Preferences										
Printing/Forms (J TIE)										
Leg Editor										
Platform Editor										
Tabular Editor										
Local Editor & Data Browser										
Vehicle Configuration Component										
TOLD										
DAFIF DAA										
Navais VPS										
Waypoints VPS										
Parachute J A VPS										
Heliports VPS										
MTRS VPS										
Local Points VPS										
Local Point Editor										
Refueling Routes VPS										
Aimpoints VPS										
Airways VPS										
Airports VPS										
SUAs VPS										
Airspace Boundaries VPS										
DAFIF Importer										
Drawing Editor VPS										
GPS Moving Maps VPS										
Common Time Playback Utility										
Map Data Library										
Point Export Tool (PET)										
Taskview										
VPS VPF File										
Map Data Manager Ph4 (Core)										
Map Data Manager Ph4 (Currency Chk)										
Projections Phase 4										
EDO Map Phase 4 (Native NITF)										
EDO Map Phase 4 (Rotation, Illumination)										
Mapping Component Final (final feat; perf imp.)										
EDO Map Phase 5 (3D Display)										
EDO Map Phase 5 (Gridlines)										
Map Data Manager Final										
Projections Final										
Manual Chum										
DBDB										
DCHUM										
ECHUM										
3D Fly-thru										
Vertical Profiles										
ESRI Shape Files VPS										

“Release Test” Activities

Government System Test is in Parallel

- **Test Procedure development**
 - Requirements validation/verification
 - Interface and Performance testing
 - IPR verification
- **Robustness Testing (Successful demonstration to Software Requirements / Engineering testing)**
- **Component acceptance testing**
 - Executing a subset of the supplier FQT and in-house Component Integration Test
- **Release Test dry-runs / Formal Qualification after TRR (Qualification to System Requirements)**
- **IPR fixes, Programmers Guides, and test documentation**
 - GFI builds - GPS Crypto Keys and JV1

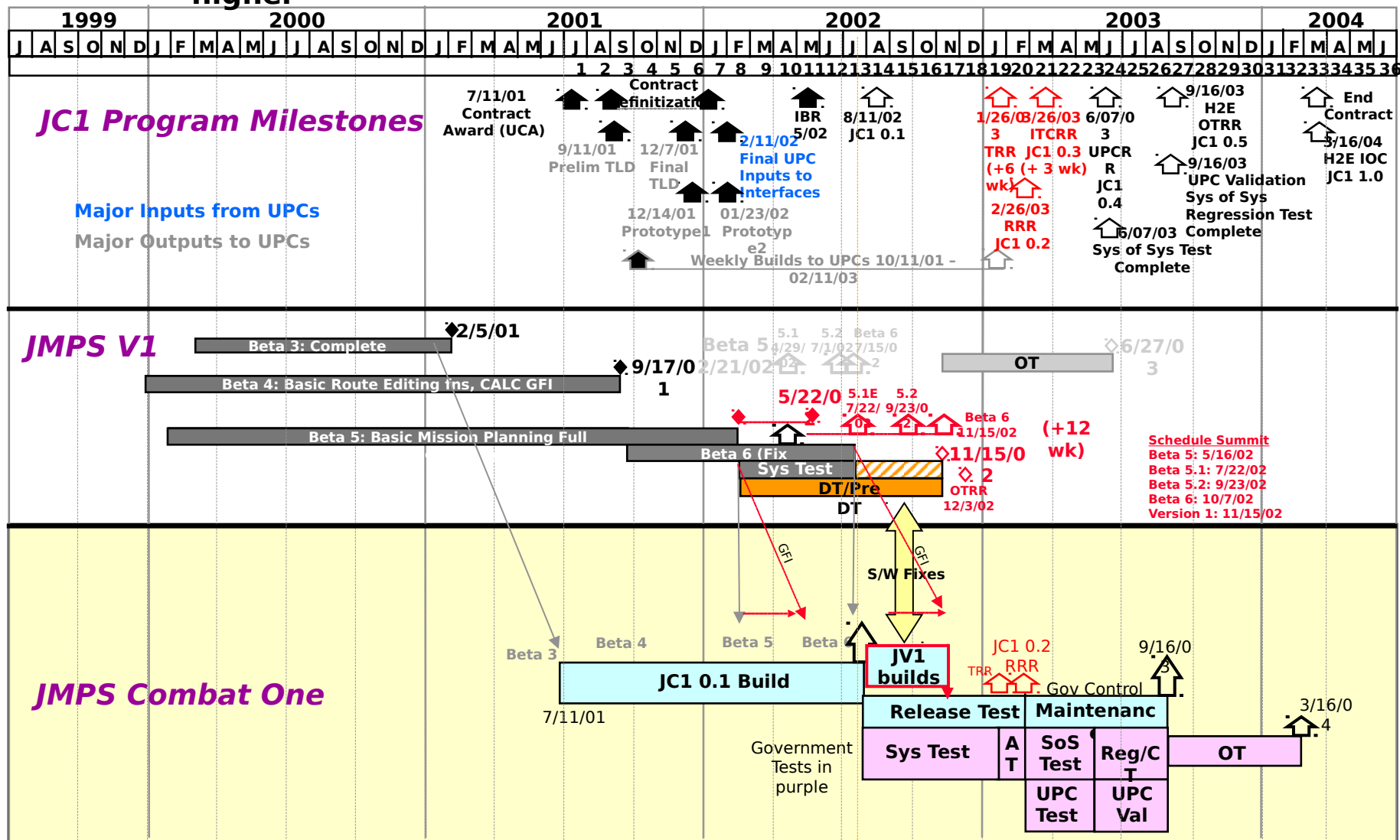


Integration and Dependencies with Version 1

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JC1 Program Master Schedule

The "Schedule Summit" mitigation is still viable / the risk to RRR is higher
 Schedule Change "on Deck" same as Schedule Summit 11/01

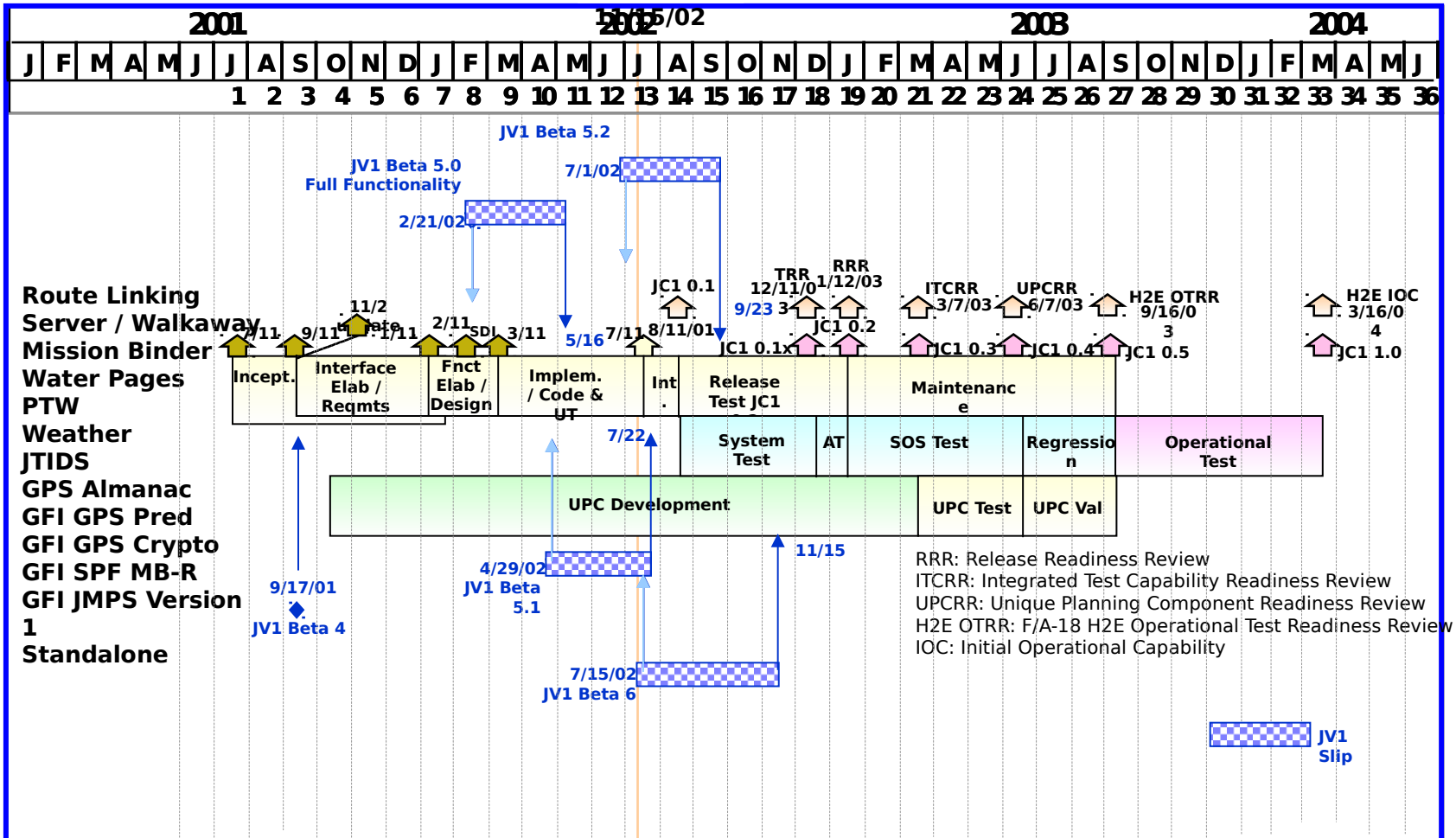


JMPS Combat 1 Schedule Summary

Component Development Baseline Schedule

Key Input:	Baseline			Est Today			Baseline		
	Beta 4.0	9/17/01		9/17/01			JC1 0.1	8/11/02	
	Beta 5.0	2/21/02		5/22/02			RRR	1/12/03	
	Beta 5.1	4/29/02		7/22/02			ITCRR	3/7/03	
	Beta 5.2	7/1/02		ENG			IOC	3/16/04	
	Beta 6.0	7/15/02		9/23/02					

To Support:



JMPS Combat 1 Schedule Summary

Changes Needed to Support Version 1 Slip

**Key
Input:**

Beta 4.0
Beta 5.0
Beta 5.1
Beta 5.2
Beta 6.0

Baseline

9/17/01
2/21/02
4/29/02
7/1/02
7/15/02

Est Today

9/17/01
5/22/02
7/22/02
ENG
9/23/02

To Support:

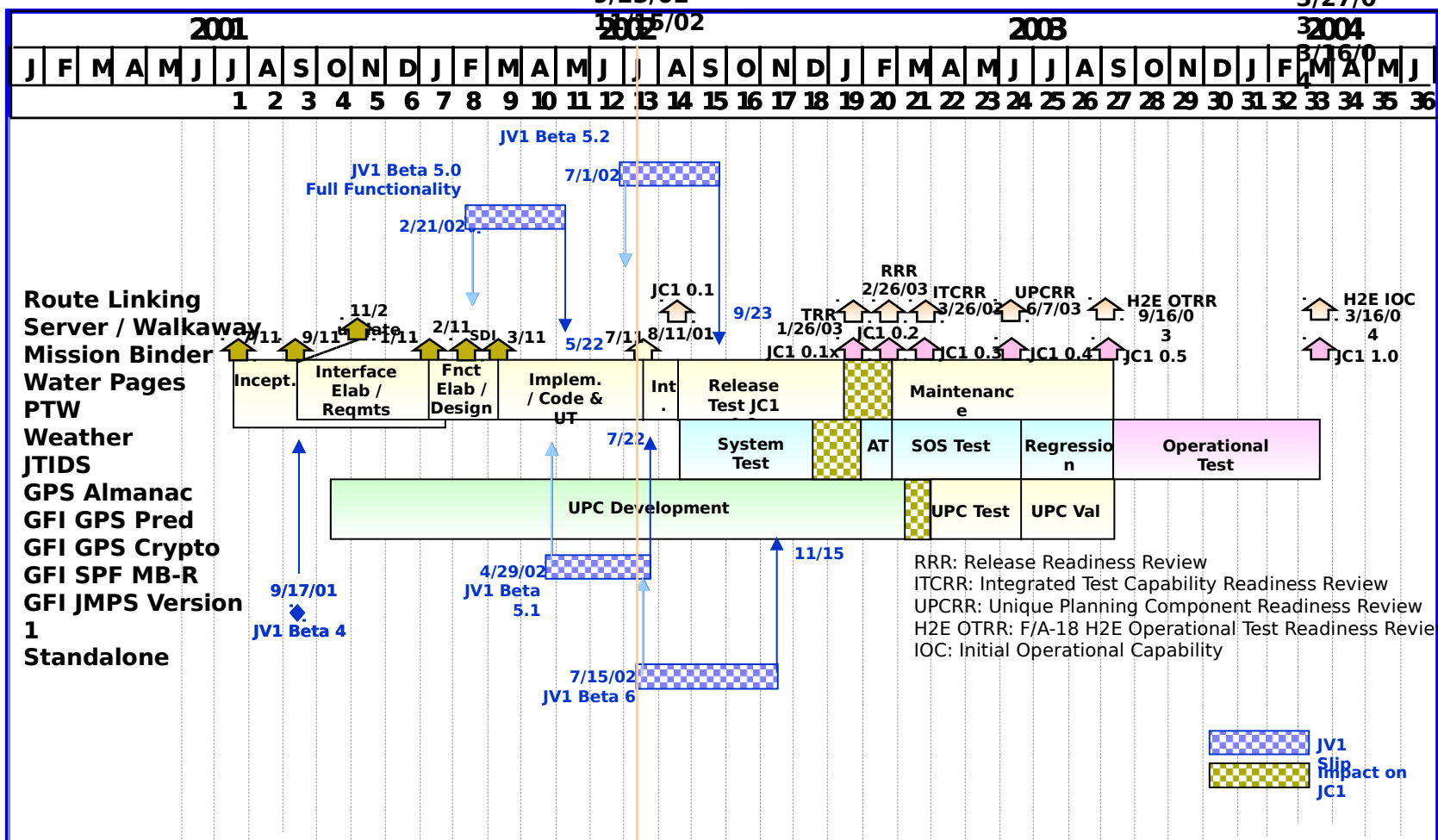
JC1 0.1
RRR
ITCRR
IOC

Baseline

8/11/02
1/12/03
3/7/03
3/16/04

Est Today

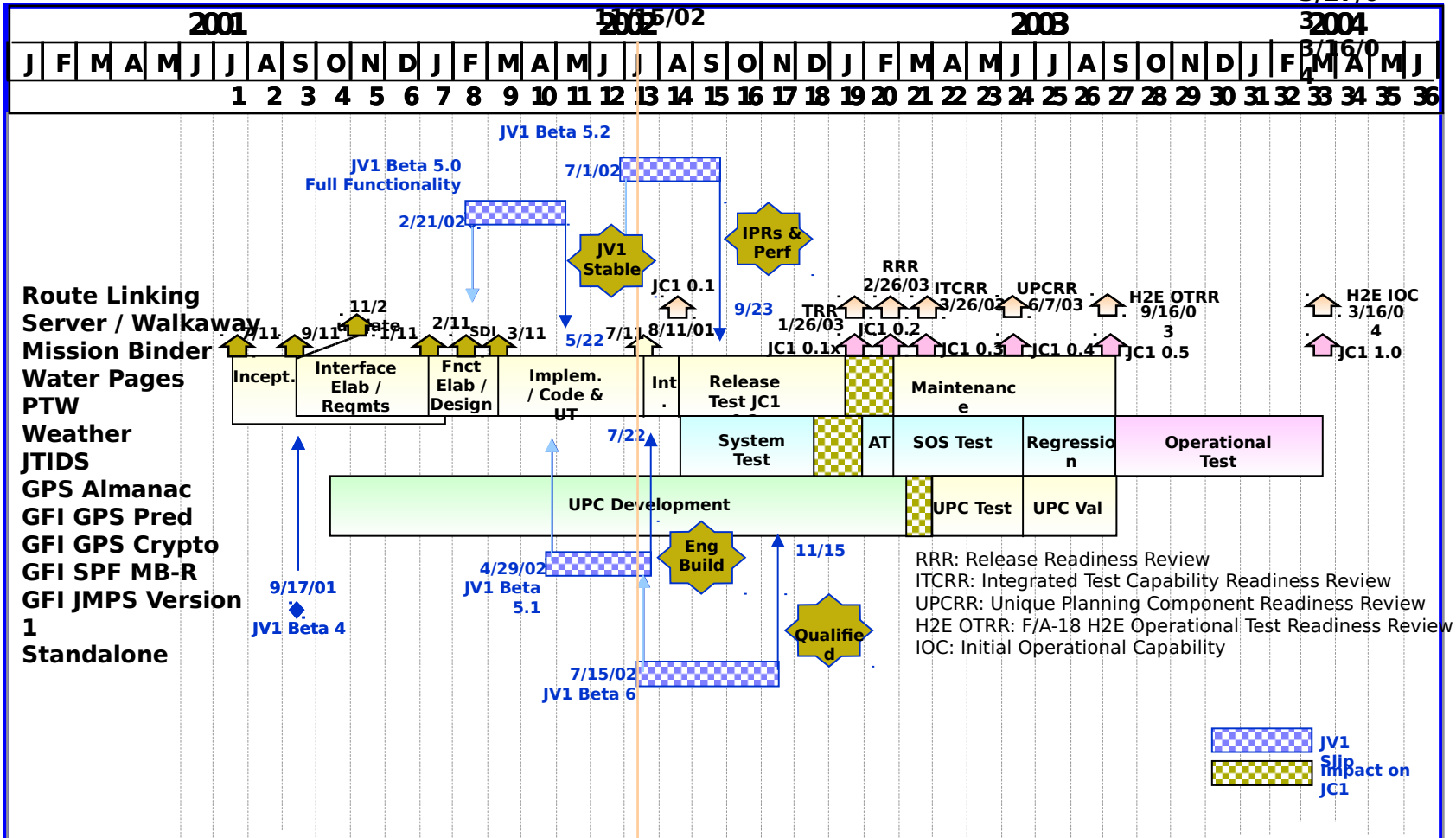
8/11/0
2
2/26/0
3
3/27/0



JMPS Combat 1 Schedule Summary

Changes Needed to Support Version 1 Slip

Key Input:	Baseline			Est Today			To Support:	Baseline			Est Today		
	Beta 4.0	9/17/01	9/17/01				JC1 0.1	8/11/02	8/11/0				
	Beta 5.0	2/21/02	5/22/02				RRR	1/12/03	2				
	Beta 5.1	4/29/02	7/22/02				ITCRR	3/7/03	2/26/0				
	Beta 5.2	7/1/02	ENG				IOC	3/16/04	3				
	Beta 6.0	7/15/02	9/23/02						3/27/0				

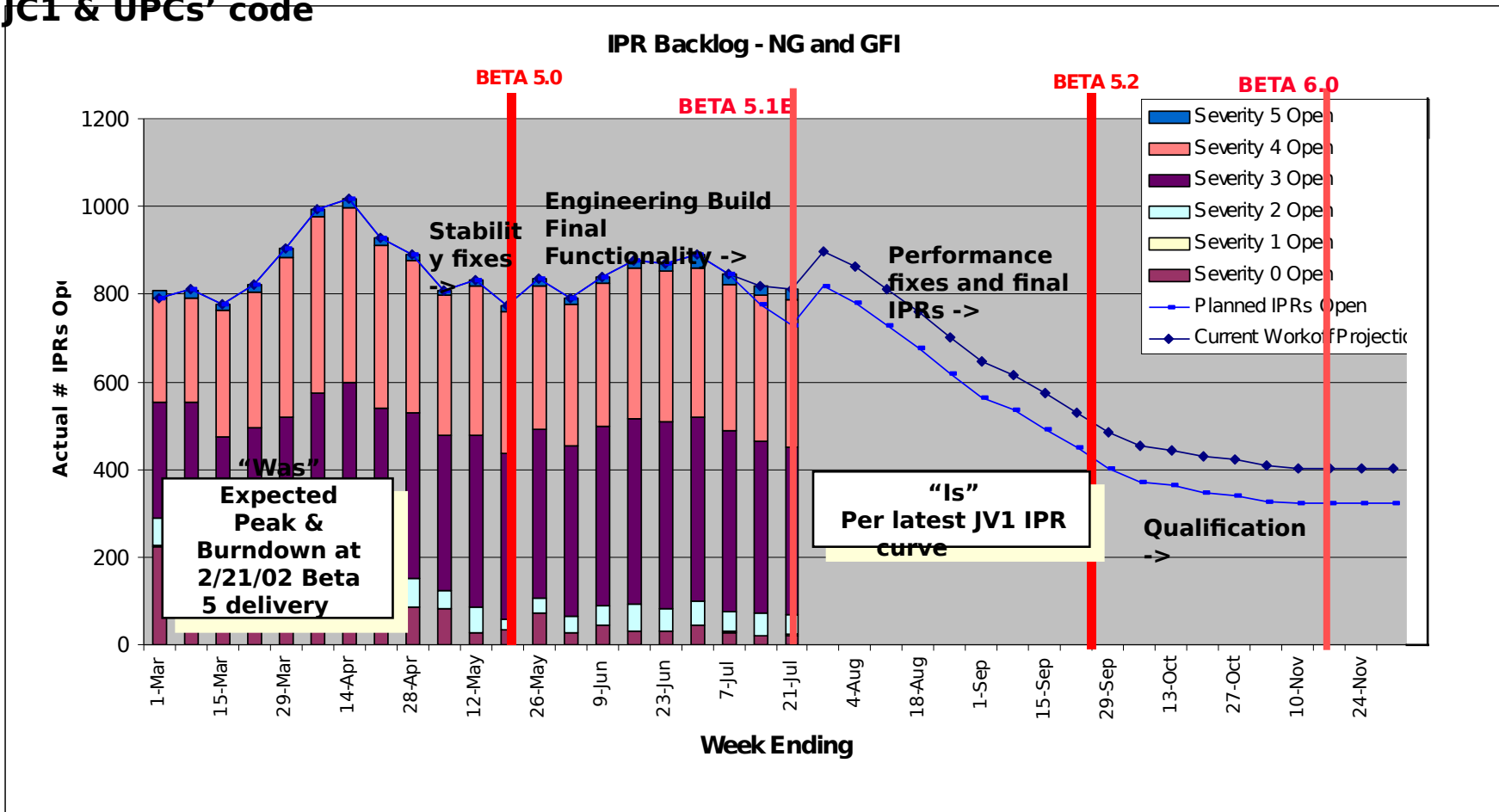


JV1 Slip Impact on JC1

3 Month Schedule / 5 Month Maturity Slip

- Original plan based on Peak JV1 IPRs at 2/21 Beta 5 Delivery; burn down thereafter
- Mitigation today based on late deliveries, performance fixes, & overall environment stability per curve

• The good news: JV1 performance fixes ID'd & prototyped; minimal to no impact on JC1 & UPCs' code



Daily Build Integration with Version 1

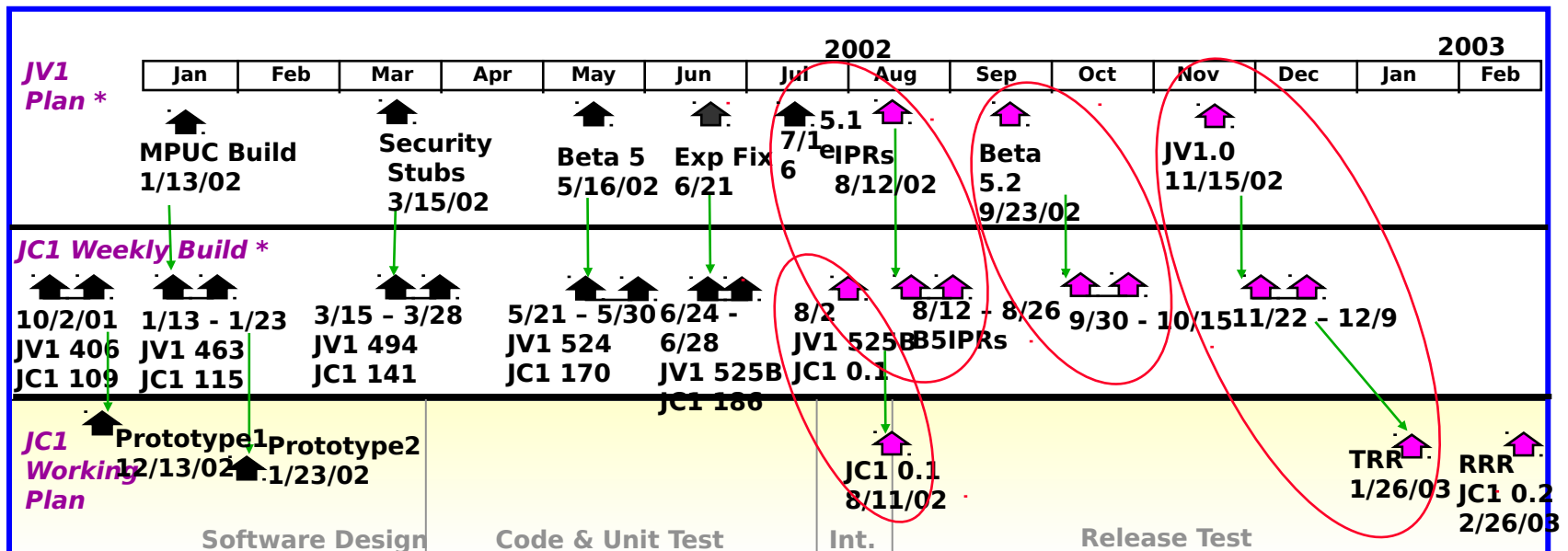
- Build 109 - JC1 Prototype 1 built on JV1 Build 406: Beta 4 plus in-work components for Beta 5
- Build 115 - JC1 Prototype 2 built on JV1 Build 463: stable build with NGIT components as of 12/13/01
- Build 141 - JC1 development build based on JV1 Build 494: security stub update
- Build 170 - JC1 development build based on JV1 Build 524: Beta 5
- Build 186 - JC1 integration build based on JV1 Build 525B: Beta 5 with time expiration fix

• JC1 0.1 will be built upon JV1 Build 525B

• Planning for three additional integration efforts with JV1 builds

— 8/26 build with the latest Beta 5.1+
JV1 525B build incorporating JV1 Beta 5.2 and GPS Crypto Key delivery

— 12/9 build incorporating JV1.0 for JC1 TR
Additional builds will be created as necessary



JC1 Schedule Summary

• JC1 0.1 8/11 Delivery: Contract Items / GFI Summary

- Expect to meet 8/11 JC1 contract items code delivery
- The Delivery will be full functionality with the exception of:
 - **GFI Version 1: Late add-ons to Version 1 contract / IPRs**
 - Point Export Tool, Common Route Definition, Vertical Profile Display
 - Complete JTIE functions & tabular display of CALC inserted points
 - Performance fixes & IPRs
 - **GFI Crypto Keys**
 - Late NSA decision on GPS Crypto Key Approach
 - **Standalone import/export data capability (potential)**
 - Contract issue
 - **Requirements “on deck”**
 - DTED (points, line, rotated grid). RFP received. October / November prototype.
 - VMAPO, SEM, crypto audit functions.

• JC1 0.2 1/12/03 Delivery: Contract Items / GFI Summary

- 1/12/03 JC1 0.2 Delivery will be rescheduled to 2/26/03 (contract action is tbd)
- All contract items and GFI to be included in 2/26/03 build (in-process builds also provided)
- If there are additional contract items, they need to be identified ASAP to meet JC1 0.2

Risk Management Summary

30 May 2002

JMPS Combat One (JC1) Risks

JMPS V1 Acceptability and Rework

JMPS V1 Development Dependencies

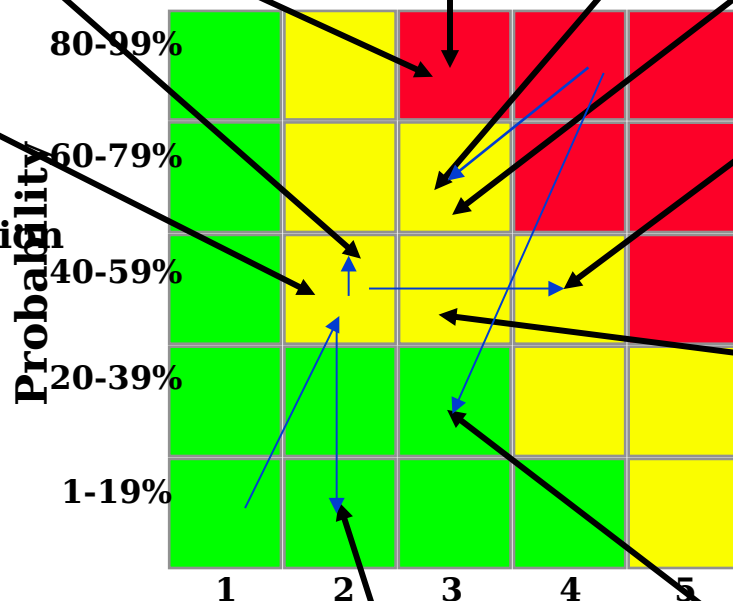
Missing or Partial Requirements may Impact UPCs

GCCS-I3 DAL Changes

JC1 Testing

Modifying JV1 GFI Components

- GPS Crypto from Hill AFB
- Parallel development with UPCs
- High Side Incorporation
- JMPS & PFPS on the same machine
- JC1 Performance
- Multiple Logins
- OAG Issues



•PTW 4.1 Imagery Availability

- Size Maturation
- Parallel Development with External Interfaces
- AIA Certification for RTM Algorithms

User Acceptance of Crypto Key Implementation

JC1 Staffing

- High -** Major disruption in the plan. May require Level 1 management or PEO(T) assistance.
- Med-** Some disruption in the plan. May require Level 1 assistance.
- Low** - No disruption. Can be managed with internal team.

DMS

Defense Mission Systems

Contract Actions

30 May 2002

Contract Actions on Deck

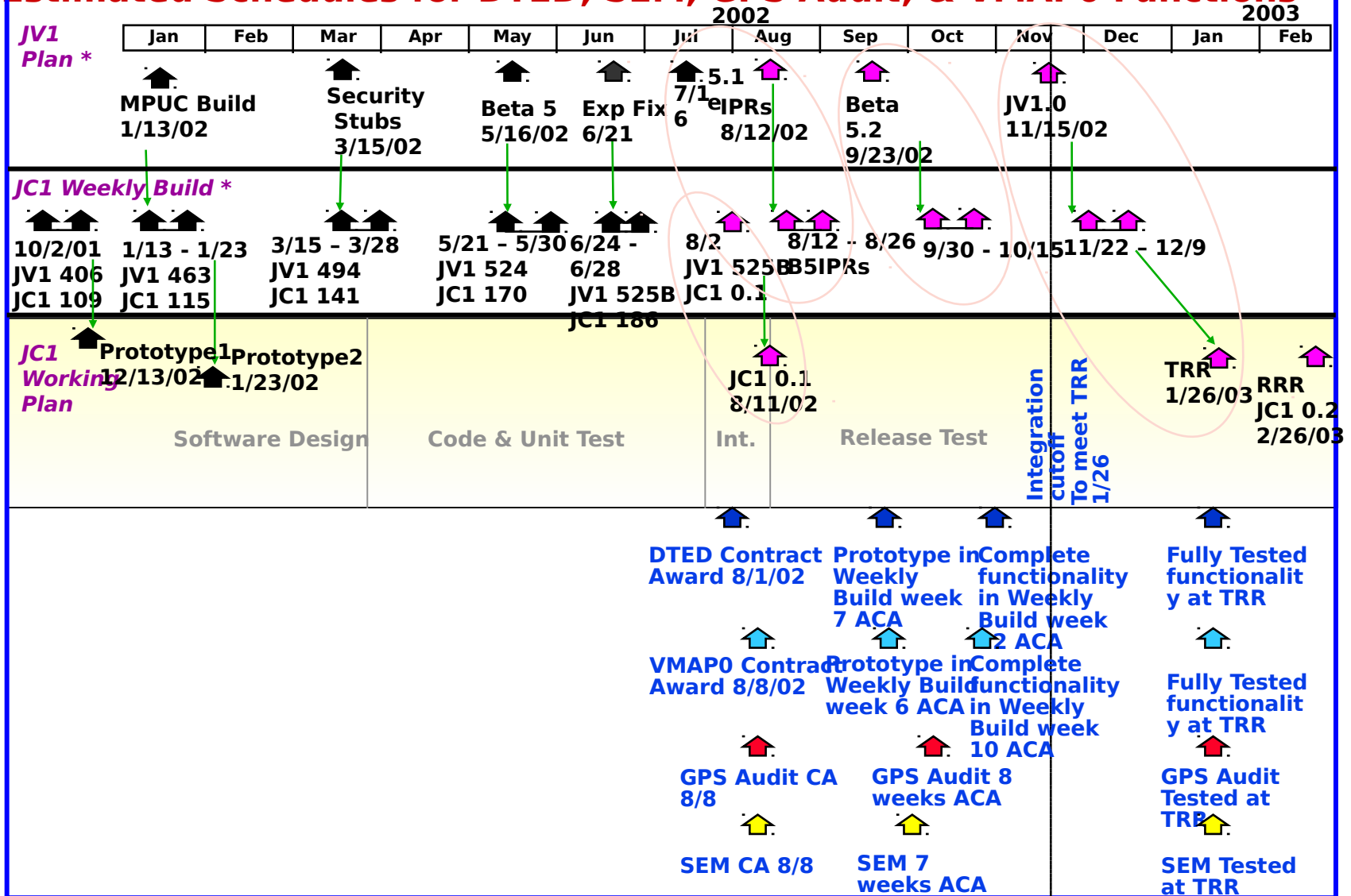
12 July 2002

Action

Version 1 slip impact on JC1	Develop detailed estimate and implement contract change after IBR. Provide ROM at IBR.	Gov
GPS Prediction deletion as GFI (now a UPC)	Proposal estimate (1164 hours - deletion)	Gov
Combined IRS	Estimate 104 hours	Gov
Renamed ICD; Combined JV1 and JC1 IDD Document enhancements More releases Maintain TLD / Combine TLD VMAPO / WVS	Estimate 317 hours to combine IDD's Estimate 170 hours for enhancements w/out JV1 doc: 1436 Estimate 180 hours for 3 additional submittals Estimate 397 hours for JC1 TLDD / 2905 for JV1 TLDD Estimate 371 hours for VMAPO or WVS.	Gov NG
Combined Programmer's Guide	No impact to combine / separate maintenance	Gov
Action items from Design review Record of events (AI 653) Multi Select (AI 657) STTO Point (AI 659) Object in Binder (AI 662, 674) Crypto key dates (AI 668) UPC Perf reqs (possibly) (AI 676) Weapon ORD timeline (possibly) (AI 677) DAFIF client / server (AI 679) SOS risk increase (AI 681) MB Data Val (AI 682)	Estimates to be provide for items requested	Gov
DTED - SLAM-ER functions (rotate, etc)	RFP Received / ATP 6/18 for requirements definition. Prop sent 7/19	Gov
Impact of DAL (potential)	More info needed; Track in Risk Management Process	Gov
SEM GPS Almanac Format / GPS Audit / VMAPO	RFP Received 7/3/02. Prop due 7/26.	NG
TAMPS Equivalency Study Recommendations	Recommendations of requirements shortfalls sent to Gov	Gov
System Status Review Actions wrt weapon vs AC	No weapon route - cumbersome; can't sort by route type; FPM ID's & CALC vs PGMs	Gov

Contract Add-ons

Estimated Schedules for DTED, SEM, GPS Audit, & VMAPO Functions



DMS

Defense Mission Systems

Overall Summary

23 July 2002

Northrop Grumman JC1 Program Summary

Technical Progress is Good; Holding Schedule Summit Schedule

- **Program is 12 Months into a 33 Month Contract**

- Completed :

- System Requirements
- Software Requirements
- Design
- 1st pass Code

- In progress :

- Unit Test
- Integration

- Formal Test follows integration

- **Program is on track to JC1 0.1 delivery of 8/11 and revised JC1 0.2 delivery of 2/26/03 (per “Schedule Summit” plan)**

- **JMPS Version 1 schedule and change stability are key to keeping JC1 schedule**

- Daily coordination between JV1 and JC1 (progress, predictive metrics, plan)
- Prototype performance improvements show significant improvement

Backup & Links

Senior Leadership Review

23 July 2002

End

JC1 UPC & GFI JV1 Component Dependencies

As of May 14, 2002. Update July 9, 2002.

Stable JV1 Framework Components

- F/A-18, SLAM-ER, EA-6B

Security Components

- F/A-18
- GPS Crypto Keys

Order of Battle

- F-18
- SLAM-ER

Admin Data Mgr

- F/A-18
- SLAM-ER

Map Data Mgr/Library

- F/A-18

TaskView

- EA-6B

GPS Almanac

- GPS

Discrete UPC / GFI Dependencies have been met

**Requirements shortfalls identified
and being processed as contract
additions:**

DTED

VMAPO

SEM

GPS Audit functions

TAMPS Trade Study

Recommendations

JC1-JV1 Component Dependency Summary

As of April 16, 2002 / Minor Change 30 May 2002

JC1 Component	JV1 Dependency	Date Needed	Date Available
Route Linking	Route Editor, Graphical Route Editor CALC	Basic Design 12/11/2001 Fully functional code 3/11/2002 Basic Functionality	Available - complete
Server / Walkaway	Framework	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
Mission Binder	Framework	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
Water Pages	Map object DTG	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
Interface to Weather	Framework	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
Interface to PTW	Framework	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
JTIDS Interface	Framework	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
GPS Almanac	GPS Almanac from V1	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete
GPS Prediction (UPC)	V1 Almanac capability	Basic Design 12/11/2001 Fully functional code 3/11/2002	Available - complete

Discrete Dependencies have been met
However, Beta Deliveries are later than planned and change stability is less than planned

Version 1 Beta "change stability" deviations from baseline plan need to be analyzed on a case by case basis
 13-12 Week schedule slip mitigation with 6 week contract mod schedule change (with fee & CPAR consideration) is to be implemented after the

JV1 Slip Impact on JC1

Mitigation Proposed at Schedule Summit 11/15/01

JC1 Baseline			Proposed at Schedule Summit	
JV1 Beta	2/21/02	Fully Functional	5/16/02	Fully Functional
5.0	4/29/02	Minimal Impact Performance	7/22/02	Minimal Impact Perf IPRs,
JV1 Beta	7/1/02	IPRs	9/23/02	Qualified
5.1	7/15/02	No Impact. Qualified	10/7/02	No Impact
JV1 Beta	12/11/02	No Change	1/26/02	No Change
5.2	1/11/02	Minimal DT/OT IPRs	2/26/02	No Impact DT/OT IPRs
JV1 Beta	3/7/03	Minimal DT/OT IPRs	3/26/03	No Impact DT/OT IPRs
6.0	6/27/03	No Impact OT IPRs	6/27/03	No Impact OT IPRs
JC1 TRR		No Changes to V1		No Changes to V1
JC1 RRR				
JC1 ITCRR				
JV1 OT End				
Risk Mitigation				
<ul style="list-style-type: none"> • Reduce / Delay development on items not needed for TOB transition <ul style="list-style-type: none"> • Air Refueling, DZ, LZ, TOLD, CRD • UPCs participate in JV1 IPR Disposition • NG perform release test sooner on Tybrin's components to find problems earlier • Minimize impact to UPCs by accommodating 12 week JV1 slip with 6 week JC1 schedule change <ul style="list-style-type: none"> • Move ITCRR 3 weeks to the right • UPCs participate in CICWG. JV1 participation / representation not satisfactory to UPCs • Move qualification to the left to find problems earlier • NG attend UIWGs / Increase User Needs influence 				

• Increase visibility on Tybrin's progress of "Beta 5 85%" (more communication &

JV1 Slip Impact on JC1

5/7/02 Schedule & Maturity Level vs Schedule Summit 11/15/01

Proposed at Schedule Summit			Proposed Today (5/7/02)
JV1 Beta 5.0	5/16/02	Fully Functional	Stability IPRs Complete
JV1 Beta 5.1	7/22/02	Minimal Impact Perf IPRs, Qualified	Final IPRS that impact I/F's, design + Add-ons*
JV1 Beta 5.2	9/23/02	No Impact	No Impact IPRs, Qualified
JV1 Beta 6.0	10/7/02	No Change	No Change
JC1 TRR	1/26/02	No Impact DT/OT IPRs	Minimal "DT/OT IPR" No Impact IPRs
JC1 RRR	2/26/02	No Impact DT/OT IPRs	No Change
JC1 ITCRR	3/26/03	No Impact OT IPRs	No Change
JV1 OT End	6/27/03	No Changes to V1	No Change

Risk Mitigation

- Establish the JC1 required Exit Criteria for each Beta release
- Prioritize JV1 Performance and remaining IPRs such that all those that result in interface changes or design changes to JC1 or UPCs are complete by Beta 5.1 (Biggest impact, not necessarily biggest payoff, first)
 - JC1 / UPC increased participation in JV1 PCCB
- Continue to work off IPRs by Beta 5.2
- Move qualification to Beta 5.2 (stability & performance driven)
- Increase joint program management (both customer and NG)
 - Using predictive metrics from JV1 in JC1
 - Using JC1 priorities in JV1 decisions

Add-ons*
 Point Export Tool
 Vertical Profile Display,
 Common Route Definition
 Database Connection Tool
 Full Print Capability (JTIE)
 Tabular Display of CALC inserted Pts
 CMF PLT scale bars for printed area
 charts

Auto start of DAFIF Importer when CD

JV1 Slip Impact on JC1

Current Estimate as of 7/23/02

JC1 Baseline			Proposed at Schedule Summit	
JV1 Beta 5.0	2/21/02	Fully Functional	5/16/02	Fully Functional
JV1 Beta 5.1	4/29/02	Minimal Impact Performance	7/22/02	Minimal Impact Perf IPRs, Qualified
JV1 Beta 5.2	7/1/02	IPRs	9/23/02	No Impact
JV1 Beta 6.0	7/15/02	No Impact. Qualified	10/7/02	No Change
JC1 TRR	12/11/02	No Change	1/26/02	No Impact DT/OT IPRs
JC1 RRR	1/11/02	Minimal DT/OT IPRs	2/26/02	No Impact DT/OT IPRs
JC1 ITCRR	3/7/03	Minimal DT/OT IPRs	3/26/03	No Impact OT IPRs
JV1 OT End	6/27/03	No Impact OT IPRs	6/27/03	No Changes to V1
Proposed			5/7/02	
JV1 Beta 5.0	5/16/02	Stability IPRs Complete	Final IPRS that impact I/F's, design + + PET, VPD, CRD, JTIE, Tab Ed IPR	
JV1 Beta 5.1	7/22/02	Final IPRS that impact I/F's, design + + PET, VPD, CRD, JTIE, Tab Ed IPR		
JV1 Beta 5.2	9/23/02	No Impact IPRs, Qualified		
JV1 Beta 6.0	10/7/02	No Change		
JC1 TRR	1/26/03	Minimal "DT/OT IPR" No Impact IPRs		
JC1 RRR	2/26/03	No Change		
JC1 ITCRR	3/26/03	No Change		
JV1 OT End		No Change	Proposed	
JV1 Beta 5.0	5/16/02	Stability IPRs	Engineering Build, limited test: PET, VPD, CRD, JTIE, Tab Ed IPR	
JV1 Beta 5.1E	7/22/02	Final IPRS that impact I/F's, design + Performance IPRs and other IPRs		
JV1 Beta 5.2	9/23/02	Qualified		
JV1 Beta 6.0	11/15/02	No Change		
JC1 TRR	1/26/03	No Change		
JC1 RRR	2/26/03	No Change		
JC1 ITCRR	3/26/03	No Change		
JV1 OT End		No Change	No Change	

JMPS V1 Acceptability and/or rework

Prob	Low	Medium	High		
80-99%			X		
60-79%					
40-59%					
20-39%					
1-19%					
	1	2	3	4	5
	Impact				

Status: **Mitigate**

POC: Gross/Martin/Gay/Pearson

Date_Id' 07/27/2000

Description:

There is a risk that the schedule for the release of the first set of components for JMPS Combat Planning will slip if JMPS V1 is not accepted by the users, or it requires a lot of re-work late in the development cycle.

Mitigation Plan Description:

NavMPS engineers follow V1 development and test efforts, monitoring the status of Betas 3, 4 and 5, reporting back to the UPC community after each Beta as to how it is being accepted, and how much re-work is happening for each of the Betas. UPC community reports back to NavMPS their concerns and issues.

Contingency Triggers:

Trigger 1: Reports come back from the UPCs after release of Beta 5.1 or later, indicating JMPS is not going to satisfy enough of the UPC requirements in the current time frame.

Trigger 2: The delivery of JMPS V1 slips 2 weeks or more.

Trigger 3: TRR shows product not ready for test

Contingency Plan:

Conduct criticality analysis with UPCs to determine how much of a JC1 schedule slip, if any, is warranted.

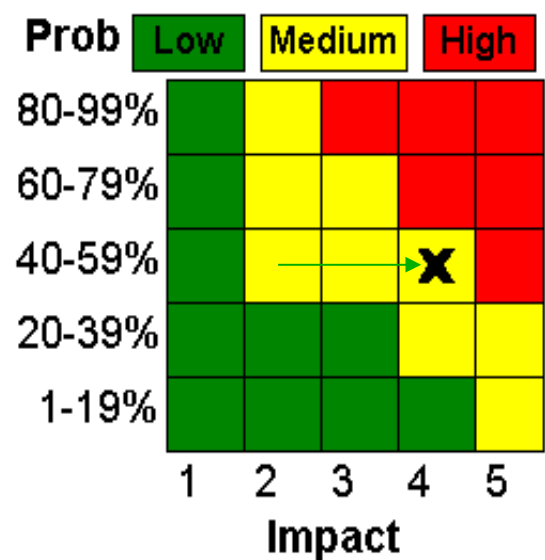
Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT.

Budget \$500 K for a JMPS specific OT.

Budget \$1M in '03/'04 for potential schedule slip. (Accommodates other schedule related risks as well)

Waiting for results from Beta 5.0 testing





Status: **Mitigate**
 POC: Ranta/K Wilson
 Date_Id' 03/05/2001

Impact increase due to
 schedule and current
 contract status (Tybrin
 out of funds as of Sept
 02 to support changes
 to GFI components)

Description:

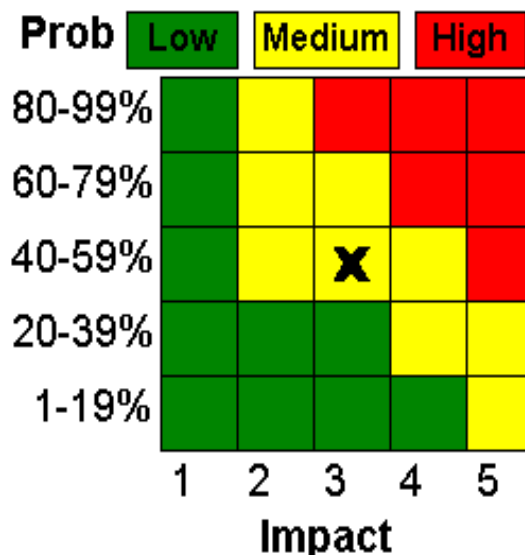
It is not clear who will have the authority to change GFI, as required for JC1 implementation, creating a risk that we will not be able to make changes to the GFI to accommodate JC1 requirements. Current Tybrin and GTRI resources are heavily tasked with JMPS V1 and PFPS versions.

Mitigation Plan Description:

Establish an ACA between Logicon, Tybrin and GTRI
 Establish a review board to evaluate potential changes to Tybrin and GTRI software to determine whether it is a JV1 or JC1 effort.
 Budgeted \$500K in 03 for Tybrin and GTRI work

Contingency Plan:

Parallel development with External Interfaces



Status: Mitigate

POC: Ranta/Stine-Hope/Crawford

Date_Id' 03/05/2001

Created separate risk for GCCS-I3 DAL

Interface changes

Description:

JC1 is developing in parallel with external data providers such as for GCCS-M/MIDB, weather, and imagery, creating a risk that the external interfaces will not be complete or mature in time for JC1 delivery.

Mitigation Plan Description:

Monitor development efforts for each of the external interfaces.

Ensure JC1 development schedule is in sync with external interface development schedules

Coordinate any known changes into JC1 baseline via the JC1 IPT

Establish a risk, specific mitigation steps and contingency triggers for each of the external interfaces where further risks are identified.

Trigger: Any External Interface development schedule slip

Contingency Plan:

Conduct criticality analysis with UPCs to determine how much of a schedule slip, if any, is warranted.

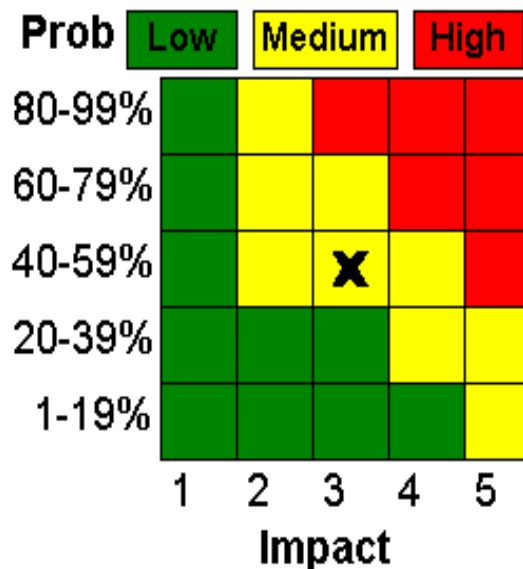
Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT.

Budget \$500 K for a JMPS specific OT.

Budget \$1M in '03/'04 for potential schedule slip. (Accommodates other schedule related risks as well)



PTW 4.1 Imagery Availability



Status: **Mitigate**

POC: Pete Nelson

Date_Id' 03/06/2001

Description:

Full functionality of the latest version of PTW (4.1) may not be available in time for PGM UPC developers to complete development of their UPCs, creating a risk for schedule delays.

Mitigation Plan Description:

PGM developers use PTW 4.0 to begin development. Discuss mitigation strategies with PGM PMAs and the PTW PMA to include maintaining backward compatability between PTW 4.0 and PTW 4.1, especially in the area of Application Interfaces. JC1 IPT to monitor development efforts for PTW and ensure JC1 development schedule is in sync with PTW development schedules. Coordinate any known changes into PGM UPC as time permits.

Trigger: A PTW schedule slip is being considered, which could lead to a JC1 schedule slip

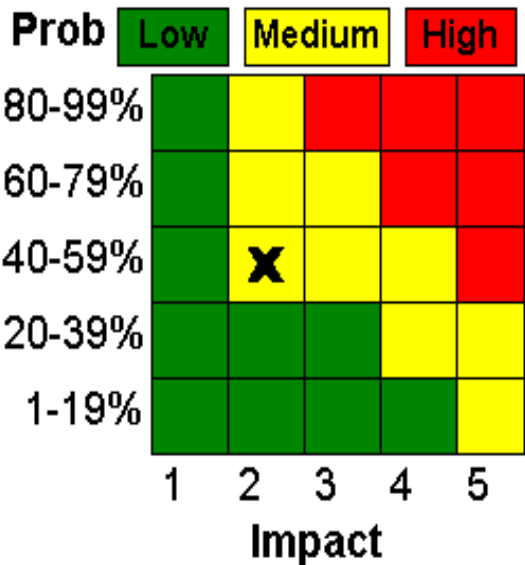
Contingency Plan:

Conduct criticality analysis with UPCs to determine how much of a JC1 schedule slip is warranted. Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT. Budget \$500 K for a JMPS specific OT. Budget \$1M in '03/'04 for potential schedule slip. (Accommodates other schedule related risks as well)



Close

GPS Crypto Key as GFI from Hill AF Base



Status: Mitigate

POC: Dennis Ritaldato

Date_Id' 05/30/2001

Flash card approach moves component to October delivery vice August.

No impact to UPCs.

Impact to integration and test TBD. Budget issues being addressed.

Description:

Providing GPS Crypto Key functionality as GFI from Hill AF Base creates a potential programmatic risk for on-time, quality delivery of the product to Logicon.

Mitigation Plan Description:

Establish an MOA between Hill and the JC1 IPT covering:

Roles and Responsibilities	Cost
Requirements to be satisfied	WBS tasking with Schedules
Deliverables	Integration Process
Transfer of funding	

Establish Triggers to be monitored by JC1 IPT, based on proposed schedule and development plan.

Assign a govt representative to monitor the GFI provider's efforts.

Trigger: Schedule delay in GPS Crypto Key development.

Contingency Plan:

Work get well plan amongst Navy, AF, and Logicon. If a get well plan cannot be worked for Hill, then modify Logicon contract to put the effort back on Logicon's contract and suffer the schedule and costs perturbations.

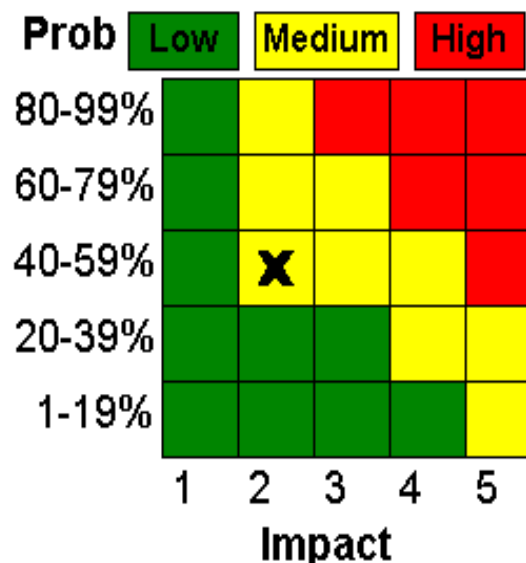
If a schedule slip is likely conduct criticality analysis with UPCs to determine how much of a schedule slip is warranted.

Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT.

Budget \$500 K for a JMPS specific OT.

Budget \$1M in '03/'04 for potential schedule slip. (Accommodates other schedule related risks as well)

Parallel Development with UPCs



Status: **Mitigate**

POC: Mary Denny/Larry Smith

Date_Id' 09/09/2001

Problem with SLAM-ER being handled by Tiger team. No longer a part of this risk.

Potential increased risk with HARM has not materialized.

Description:

JC1 schedule requires the JMPE and several UPCs and common components to be developed with overlapping schedules, creating a risk that some dependencies may not be satisfied in time to keep schedule.

Mitigation Plan Description:

Develop early JMPE interface prototype and distribute to UPCs to support their understanding of the interfaces and provide a code baseline to reduce UPC development time and system integration time. Conduct TIMs to solicit feedback from UPC developers and others.

Involve UPCs in the CICWG (ICD management)

Logicon attend UPC meetings as requested meetings to provide understanding of the JMPE capabilities and integration needs. A provisioned item has been established to support this.

Provide debugging support to UPC developers (UPC-UPC, external systems, JMPE).

Trigger1: Logicon is 3 weeks late with the prototype 2 release

Trigger2: A UPC is more than 3 weeks behind their no-slack schedule

Trigger3: Too many UPC integration problems to address (100 open)

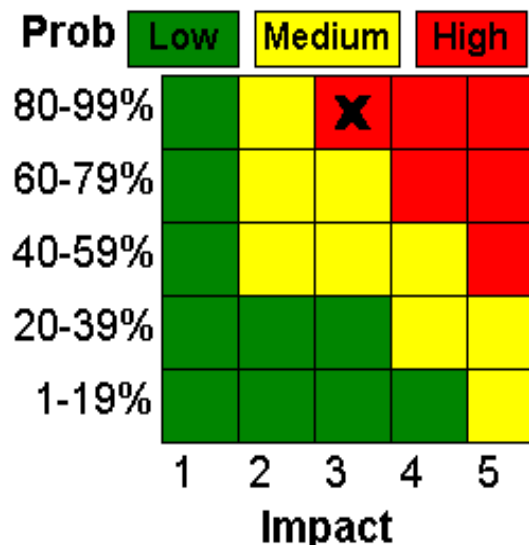
Contingency Plan:

Increase budgets for UPC integration support.

Develop incremental prototype releases based on UPC priorities.

Research schedule alternatives based on HW/SW support for TAMPS and other scheduled aircraft OTs. Consider JMPS specific OT.

JV1 Development dependencies



Status: Mitigate

POC: Denny/Lewis/Bielewicz

Date_Id' 09/21/2001

While specific components needed for JC1 development have been delivered, performance and stability problems keep this risk red.

Description:

Required artifacts and resources from JV1 may come in late, creating a risk that the schedule for the release of the first set of components for JMPS Combat Planning will slip.

Mitigation Plan Description:

Carefully identify software, human resource, and equipment dependencies, establish need dates, and review the JV1 lower-lever schedules and plans. Monitor changes in these plans and develop work-arounds for problems that develop. Ensure JC1 and JV1 weekly status meetings have a common attendee to communicate potential impacts. Obtain insight from key JV1 developers/engineers/testers. Keep backup staffing plans current in case JV1 personnel cannot be released when needed (this includes hiring consultants, borrowing from non-JMPS projects, adding hours to the subcontracts, using government programmers).

Trigger 1: Software required for JC1 development is more than 2 weeks behind a schedule that would just meet the JC1 need date .

Trigger 2: Staff will not be available in the months needed based on JV1 EAC plan.

Trigger 3: TRR indicates product not ready

Contingency Plan:

Use the chain of command to influence changes to project plans/schedules to meet the overall good of the JMPS program.

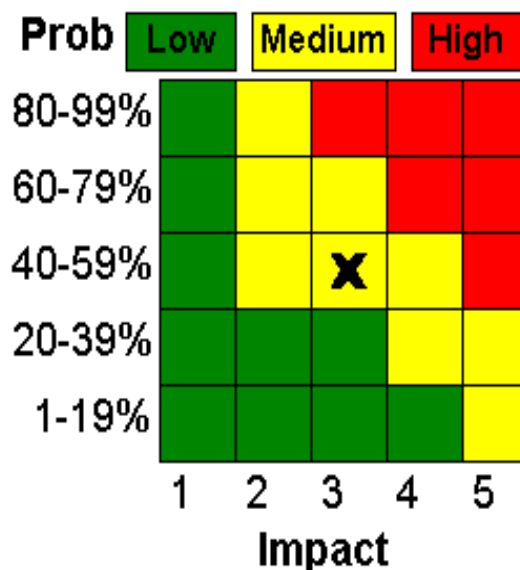
Conduct criticality analysis with UPCs to determine how much of a schedule slip, if any, is warranted. Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT.

Budget \$500K for a JMPS specific OT.

Budget \$1M in 03/04 for potential schedule slip. (Accommodates other schedule related risks as well).



Size Maturation



Status: **Mitigate**

POC: Denny/Lewis/Ribultan

Date_Id' 07/11/2001

**Size growth within
the expected range**

Description:

The software development cost (as indicated by function points and SLOC) may grow, creating a risk that JC1 will go over-budget.

Mitigation Plan Description:

Monitor the Function Point and SLOC metrics during contract execution to determine if cost containment is jeopardized. FY02 is the critical timeframe to monitor, as the software will be developed then. Logicon to present size metrics monthly, and resulting proposed budget adjustments for IPT leadership.

Trigger1: When the function point or SLOC count exceeds 10% of initially predicted for the component, or the SLOC count exceeds initially predicted by 250.

Contingency Plan:

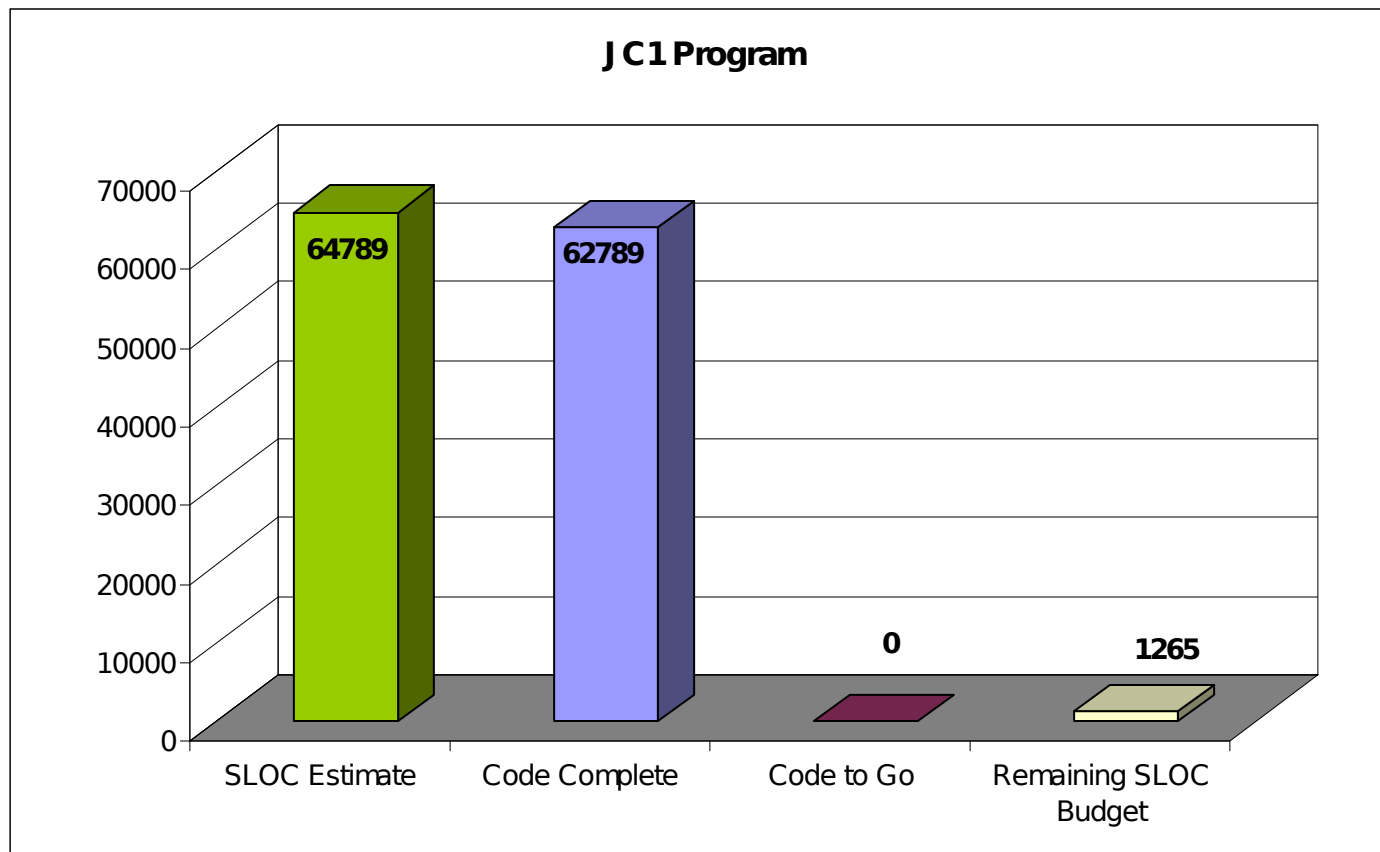
Obtain an independent review of the JC1 design to ensure that feature-creep has not occurred, and to suggest improvements that would achieve SLOC reduction and cost savings.
Consider delaying uncoded capabilities that may not initially be needed by the mission planners.
Budget 20% for Size Maturation.



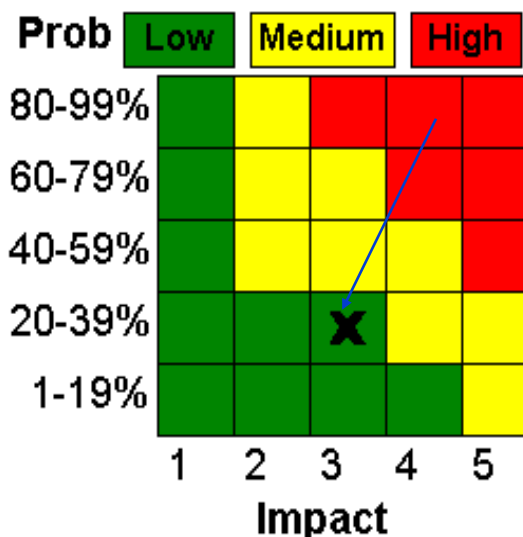
JC1 SLOC Summary

Use Case	Initial SLOC Estimate	Design Review SLOC Estimate	May SLR Estimate	Code Complete (Jun '02)	Unit Test Complete (Jul '02)	CIT Complete (Aug '02)
Route Linking	2412	3000	3204	3204		
Server/Walkaway	9577	8300	13013	13013		
Mission Binders	8957	11000	15700	12778		
Create/Use Water Pages	965	5000	5300	4618		
Weather	4942	5000	7612	7612		
PTW Interface	11085	11000	12254	12254		
Access SPF	1135	1100	784	784		
GPS Almanac	2067	2000	1950	2221		
J TIDS	4961	5300	4600	6305		
Standalone		8199	10000	14540		
J C1 Total	46100	51700	64417	62789		
J C1 Total (with Standalone)		59899	74417	77329		

Size Summary



User Acceptance of Crypto Key Implementation



Status: **Mitigate**

POC: G Ranta/D Ritaldato

Date_Id' 11/09/2001

User community accepts flash card approach. Issue wrt to network separation has been resolved to UPC satisfaction.

Description:

The DTD-2000 (KOV21) solution for handling Crypto keys will not be available for the initial release of JC1. The JMPS security working group, NSA, and Hill AFB are looking at alternative solutions that may involve solutions that create risk for user acceptance, especially if the solution is less efficient than the current Crypto Key loading process.

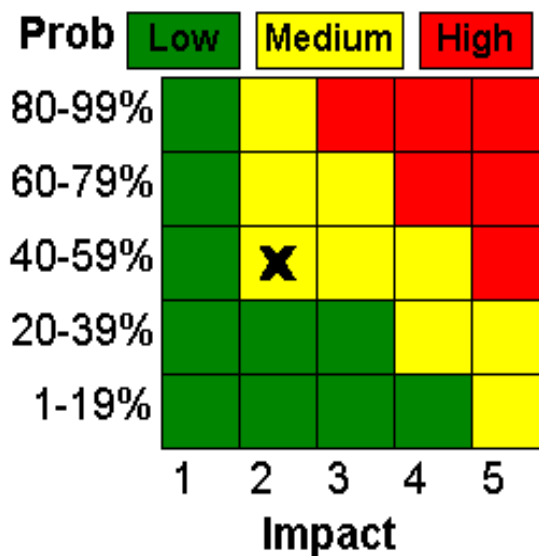
Mitigation Plan Description:

- Security Working Group to work with NSA and Hill AFB to develop alternative solutions.
- Prepare a revised CONOPS with an Interim solution of a TAMPs-like process that allows hard disk storage of keys until the KOV-21 is ready.
- UPCs develop a multi-stop brick load process to enable key loading separate from mission planning and mission data loading
- Develop user interface presentations for the alternative solutions
- Operational users to be brought in to review alternatives and migration plan to revised approach.

Contingency Plan:

Look at possibility of moving the JC1 schedule to wait for the KOV-21
 Research other HW/SW alternatives
 Consider JMPS specific OT





Status: Mitigate

POC: J Dawes/M Chaconas

Date_Id' 11/05/2001

Description:

JC1 software to support high-side requirements must be incorporated before the program can be fielded. Integrating and testing this additional software creates a risk that the JC1 0.2 milestone will not be met with 100% functionality.

Mitigation Plan Description:

Work with High-side management personnel to develop a schedule that meets the 11 Jul 2002 code cutoff date that supports JC1 0.2.
Expedite process to get task order on contract.

Trigger: High-side schedule shows completion of software development unable to meet 11 Jul 2002 deadline.

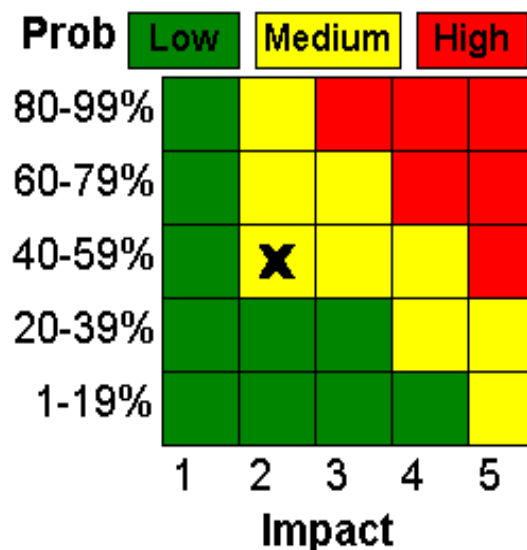
Contingency Plan:

1. Reduce functionality to meet 11 Jul date.

High Side Incorporation

- **Need to definitize contract to keep standalone on schedule**

JC1 Overall System Performance



Status: **Mitigate**

POC: M Denny/McClellan/Pearson/Ga

Date_Id' 02/07/2002

Description updated to reflect risk to performance due to JC1 changes only.

Description:

When JC1 components are added to the JV1 product or when JV1 components are modified to support JC1, it may degrade overall JMPS performance, creating a risk of failing to meet user expectations for performance.

Mitigation Plan Description:

- Establish a Performance Working Group to identify potential problem areas during top-level and detailed design and steer the design in a direction that delivers good performance. For components having completed design and initial code, the group will develop proposed improvements to problem areas found during development and testing. The group operates using the following process:

- Perform initial assessment, create log
- Review of Focus-Area Log bi-weekly
- Update log to reflect recent performance focus rating change
- Evaluate top ten focus areas
- Assign action where most benefit can be gained

Actions include reviewing designs in detail for suspected problem areas, using independent reviewers to look specifically for performance problems, developing early prototypes, evaluating other systems for solutions and similar problems. This activity will be supported by testing against performance requirements from ORD, Elaboration use cases, JV1 benchmarks, etc.

Contingency Plan:

Trigger

Test results indicate that an ORD threshold will be violated that had not been violated by the JV1 software or that performance of critical JV1 capabilities has been degraded more than 10% in benchmark tests.

Plan

Conduct in-depth analysis of test results

- Isolate to a specific design/code element if possible
- Look at re-design
- Make recommendations for change

Develop plan for change implementation



JC1 Performance Working Group

Status

Added "Lazy Copy" to design

Critical Components	Critical Methods	Monitor Group	Comments	Action
Mission Binder Service	"Drag Drop" "Cut/Copy/Paste"		1 Test with multi-user/multi-session. On a copy operation the file is copied to the machine. This is done even if the file is not pasted. Copying of large files expected to slow performance, but copy/cache is dictated by choice of using SPF (unless internals of repository become accessible).	Review design and code packages carefully, plan early testing in code phase. 4/26/02 Will investigate a uniform solution for copy-paste & drag-drop behavior (incl. lazy copy for drag-drop). 5/24/02 Lazy copy will be implemented.
Mission Binder Service	"Open" (a file)		1 Test with multi-user/multi-session. Opening a file requires that the file first be copied from the repository to local storage. Copy/cache is dictated by choice of using SPF (unless internals of repository become accessible).	Start performance testing on Route Linking and Water Pages
Mission Binder Service	"Close" (Save)		1 Test with multi-user/multi-session. During a close/save to the repository, the user waits for the save to complete.	Determine if save process is synchronous/asynchronous and whether wait times are significant
WeatherDataObject	GetGriddedWeatherData		1	
Mission Binder Service	Notify (following user updates to data using COM+)		2 A synchronous event fired to a non-existent client will lock up the workstation that fired the event. 4/26/02 wait for tests to investigate scope of lost subscriber problem. No documentation found on asynchronous events in COM.	Meet with developer(s) to ensure this approach is avoided. 4/26/02 Run tests when S/W available and simulate lost subscriber
Server Configuration DO	Update Configuration Data		2 Monitor responsiveness to config changes as well as session performance (COM+)	Test to determine responsiveness. This might entail making changes to explorer tree on server and observing the propagation time.
PTW Client Side	retrieve		2 Need SIPRNET connection to test	

Meet with M.B. Lead. May need to improve Caching post-code-complete to offset cost of extra copy

Setting up multiple user performance test

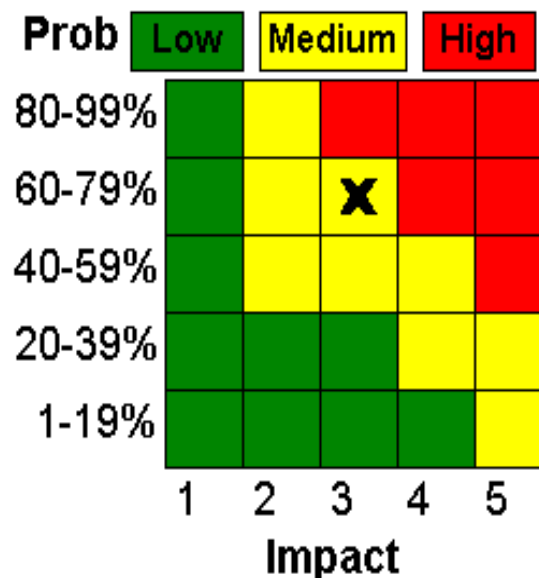
Start performance testing on Route Linking and Water Pages

Problem area

Overall Performance

- **Using JV1 configuration for non-server-related requirements (e.g., JV1 existing)**
- **Extracted Elaboration Use Case performance requirements for monitoring**
- **Developed internal list of additional goals/targets for performance**

JC1 testing



Status: Mitigate

POC: Ranta/Lacey, Martin

Date_Id' 02/07/2002

Test team in process of updating risk based on updated schedule wrt 5.x releases.

Description:

Several problems have arisen related to testing due to the schedule slip for JV1. These problems have created a risk that the JC1 product will not be thoroughly tested and will fail OT or the schedule will have to slip to accommodate additional testing.

The problems identified:

1. Insufficient time for system of system test.
2. Time for testing of JC1 is being hampered by the delivery of components in Beta 5.1 and 5.2 of JV1

Mitigation Plan Description:

Each problem cited in the risk description is being addressed by the test community.

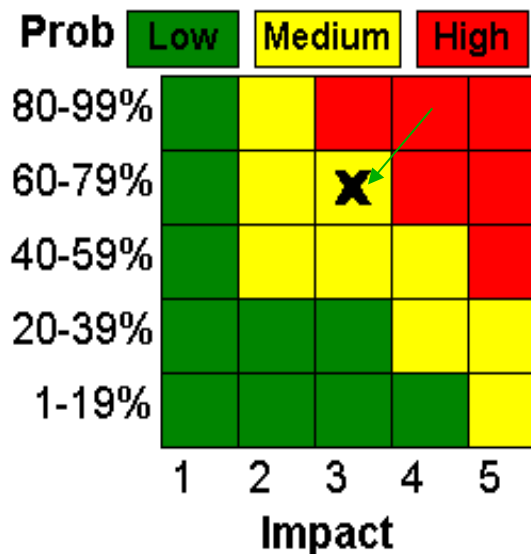
By 7/22/02 (release of 5.1) test team to report to JC1 IPT management on the impact of JC1/JV1 development schedules on the test team's ability to meet its objectives, and make recommendations for schedule adjustments, if needed to ensure product readiness for OT.

Contingency Plan:

Trigger: 7/22/02 Test community indicates JMPS will not be ready for OT as scheduled

Plan: IPT leadership and the test team to conduct an analysis of the options and make schedule adjustments and/or product requirements adjustments as needed.

Missing or Partial Requirements May Impact UPCs



Status: **Mitigate**

POC: Ramirez/Denny/Bielewicz

Date_Id' 03/25/2002

Positive results from study. Team is acting based on these results.

Description:

Platform and PGM UPCs are finding requirements that are missing and/or partially met in JC1. This has been encountered by the weapon UPC in the area of DTED, and by the E2C UPC in its requirement to retrieve World Vector Shoreline (WVS) map data. As the JC1 UPCs continue their development against Beta 5 of the JMPS framework, there is a high probability that the UPCs will continue to encounter more requirements that are missing or partially met. There is very little time or funding for the framework to implement and test new functionality, or the UPCs to develop work-

Mitigation Plan Description:

- NGIT to conduct a trade study of TAMPS to identify the functions/requirements of TAMPS that are not completely addressed in JC1.
- UPCs to work with NGIT in conducting a focussed assessment of the study, the prototype, and developer insite to determine what functions/requirements, if any, are not completely satisfied, and how critical these functions/requirements are to achieving the goal of getting TAMPS off the boat and passing OT.
- Develop a process for responding to these missing and partial functions/requirements and then address them one at a time.

Contingency Plan:

Trigger: More than 3 months of additional tasking is identified beyond what is originally planned.

Conduct criticality analysis with UPCs to determine how much of a JC1 schedule slip, if any, is warranted.

Research schedule alternatives based on HW/SW support for TAMPS and other scheduled Air Craft OTs. Consider JMPS specific OT.

Budget \$500 K for a JMPS specific OT.

Budget \$1M in '03/'04 for potential schedule slip. (Accommodates other schedule related risks as well)



TAMPS Equivalency Trade Study

- **Assessed the functional completeness of JC1 and its suitability as the TAMPS replacement in the field**
 - **The criteria for suitability is complete support of functions currently performed on TAMPS and used by the JC1 target platforms: JDAM, JSOW, HARM, SLAM-ER, F/A-18, F-14, and E-2C.**
 - **Also incorporated AV-8B and other platform feedback in the review/coordination process.**
- **The approach used was to evaluate interfaces available to MPMs on TAMPS and to analyze the JC1 design and requirements for equivalent capabilities.**
- **Resulting findings (see next chart) being addressed by PMA-233 and Northrop Grumman IT**



TAMPS Equivalency Trade Study Results

Summary

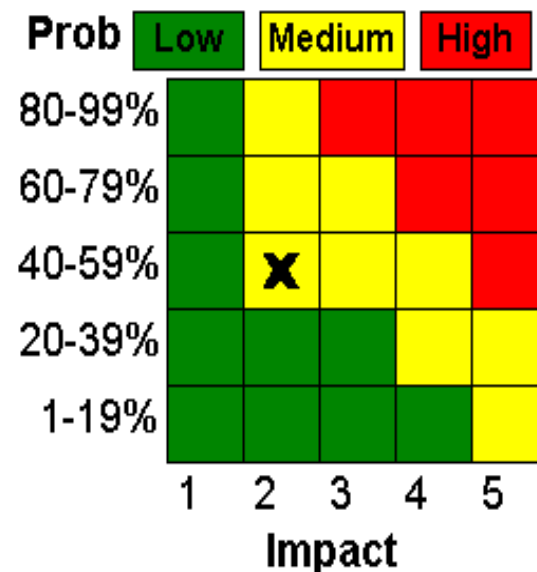
7 Re



Issue	IPT Recommendation
Creating a Rubber Band Line on Display Create a line between an anchored point and the cursor; click mouse; ending lat/lon is returned to MPM	1
Converting Latitude/Longitude in radians to Semicircles (180 degrees is 1 semicircle quantity used in avionics interface)	1
Retrieving DTED - added options for SLAM-ER Add function to retrieve a set of points, a line, a rotated rectangular grid, or a polar grid (J MPS provides a point, non-rotated grid)	1
Retrieving NIMA Vector Products E-2C needs VMAP0 data (coastlines and borders) retrieval by specifying the corners of a geographic area	1
HARM Requires Some Additional .EQP fields J MPS Order of Battle uses GCCS-13/DAL. TAMPS uses full MIDB. (need DAL change to provide .EQP)	1
BE Numbers for Threats Bring in Basic Encyclopedia numbers for threats from the MIDB through the DAL (requires DAL changes as well)	1
Summary Data Queries/Reports global data summaries for plan management (e.g., list of all J DAM routes on the system)	1
Limiting the Number of Points in a Route	2
Declassifying PC Cards - PCMCIA TAMMAC may already supply what E-2C needs . Windows OS does a lot of this, but not rewriting zeroes	2
5 identified	4
3 identified	5

IPT Recommendations

- 1 Needs to be addressed by framework in J C1 to get TOB
- 2 Needs to be addressed by UPCs in J C1 to get TOB
- 3 Requires UPC Assessment
- 4 Not mission critical, but recommended for future release
- 5 Not needed



Status: Mitigate
 POC: Ranta/J Gardiner
 Date_Id' 04/08/2002

Research being conducted.
 Preliminary results for DII COE impacts available. NMCI impacts TBD due to immature definition of NMCI processes wrt the fleet user.

Description:

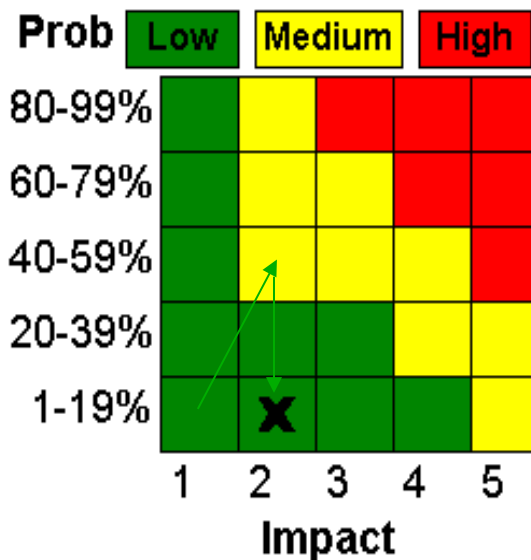
The latest Mission Planning Operational Advisory Group (OAG) message indicates that users see DII COE, NMCI, and IT-21 as road blocks to the war fighter's ability to get his job done, creating a risk that JC1 will not be accepted by the users.

Mitigation Plan Description:

Each of the issue areas, (DII COE, NMCI, and IT-21) to be researched to identify the issues. The issues then to be evaluated in terms of impacts to the fleet. Once the impacts have been determined and prioritized, program decisions to be made on how to handle (fix in software, obtain waivers, leave as is and accept the risk)

Contingency Plan:

TBD



Status: **Mitigate**

POC: M Denny/Lewis/Wilson

Date_Id' 07/11/2001

Potential staffing problem never materialized. Recommend this risk be retired.

Description:

JC1 may not meet staffing plan, due to both the JV1 slip and potential attrition due to employees' uncertainty in their future due to imminent program ramp-down. This creates a risk that the schedule for the release of the first set of tested components for JMPS Combat Planning will slip. Staffing plans had assumed testers would be available from JV1 creating a risk that the schedule for the release of the first set of components for JMPS Combat Planning will slip.

Mitigation Plan Description:

Carefully identify and monitor needs. Keep backup staffing plans current in case expected personnel cannot be released when needed. Work with Logicon management to identify people who can be moved to JC1. If government is to add maintenance or follow-on effort to JMPS, try to expedite contract action so that key personnel are still available.

Trigger 1: Staff will not be available in the months needed, based on planned vs actual data and updated projections that result in schedule slipping or cost overrunning..

Contingency Plan:

Hire consultants, new staff, add hours to the subcontracts, use government programmers, and /or use developers as VI ramps down..

Conduct criticality analysis to determine how much of a schedule slip, if any, is warranted.

If shortfall is addressed with new employees or consultants, address whether assumed efficiency will still be met or whether there is a cost pressure.

Budget \$1M in 03/04 for potential schedule slip or cost pressure due to efficiency loss with new employees. (Accommodates other schedule related risks as well).



Staffing - Test Area

- **July 02 2002:**

- **As expected, 2 key testers transferred to longer-term programs within Northrop Grumman**
- **Near-term tester shortfall has been accomodated**
 - Hired a new (junior) tester
 - Borrowed 1 system engineer from JC1
 - Sharing 3 testers with JV1
- **These actions provide the staffing needed through the release of JC1 0.1 and give us time to seek a longer term solution**

AIA Cert for JMPS RTM Algorithms

Prob	Low	Medium	High		
80-99%					
60-79%					
40-59%			X		
20-39%					
1-19%					
	1	2	3	4	5
	Impact				

Status: Mitigate

POC: Ranta/Lacey/Fairell

Date_Id' 07/24/2001

Description:

AIA Certification for JMPS RTM (Radar Terrain Masking) Algorithms May Delay Release. The certification process of the JMPS RTM algorithms by AIA during OT may lead to cost and schedule impacts due to major disconnects with AIA's IMOM S/W program. Note: AIA will not distribute IMOM source code for analysis/comparison with JMPS RTM source code. Only executables are available.

Mitigation Plan Description:

1. BAE (Logicon subcontractor) will implement/re-host RTM algorithms from AFMSS MPS that have been already approved by AIA for operational use.
2. BAE will then validate re-hosted RTM S/W against AFMSS MPS & PFPS.
3. Coordinate this approach with AIA and also coordinate early testing, validation, and feedback with AIA so that any disconnects can be resolved before OT.

Contingency Plan:

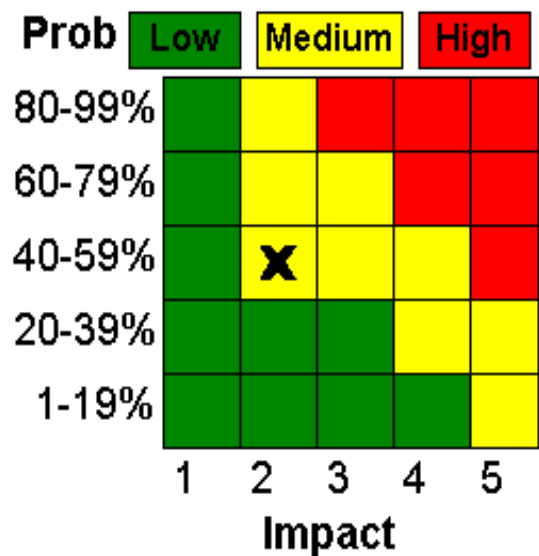
Trigger: Agreement with AIA on validation approach not reached by Feb 21, 2002.

Not clear what certification required for Navy. ORD and SSS requirement exists. More research with OT required to develop acceptance criteria for

RTM Algorithms

- Apply to line-of-sight terrain masking algorithms
- Do not involve TOTF detection/engagement algorithms
 - Not needed to match PFPS 3.2
- IMOM (AIA model) includes both masking and detection/engagement algorithms, comparison would be for masking only
- Contract action needed

Multiple Logins



Status: **Mitigate**

POC: Denny/McClellan/Ritaldato

Date_Id' 03/02/2002

Description:

There is concern that the user may have to remember and use more IDs and passwords when using JMPS than when using TAMPs. Several specific possibilities have been suggested that might cause this: 1) Having a separate (possibly different) account on a walk-away machine when disconnected from a network; 2) When needing to access something on SIPRNET; 3) When a Windows 2000 Server using Active Directory is used to authenticate account information; 4) When connecting to external systems such as MIBD, SPF, METCAST, PTW and a GPS Almanac source.

Mitigation Plan Description:

Review these issues 1 by 1 to see if the hardware environment that SPAWAR plans to provide on the ship would dictate multiple logins, and if design changes could eliminate that need.

Contingency Plan:

☐ Educate users on the need for multiple accounts/passwords in the Windows 2000 network architecture and in the shipboard configuration they use.

New risk. Plans being developed.



Multiple Logins

- 1) Separate account on a walk-away machine
 - Needed unless cashed-credentials waived by COE
 - Could be same user name and p/w
- 2) SIPRNET
 - Always connected via GENSER network, p/w may be required for some sites, Router has a list of fixed IP addresses
- 3) Server using Active Directory
 - Same as #1
 - Will remember data source locations across networked PCs

• 4) **MIDB is a Win 2K Computer using AD**

External System	UserID	Password	Comment
MIDB	n/a	n/a	Will change with later DAL upgrade
SPF	1/Site	1/Site	Set once by Admin, changeable
PTW	1/Site	1/Site	Set once by Admin, changeable
Weather	1/Site	1/Site	Set once by Admin, changeable
Almanac	1/Source	1/Source	Set once by Admin, changeable

JMPS and PFPS on Same Machine

Prob	Low	Medium	High		
80-99%					
60-79%					
40-59%		X			
20-39%					
1-19%					
	1	2	3	4	5
	Impact				

Status: **Mitigate**

POC: Ranta/Bielewicz/Meisinger

Date_Id' 01/15/2002

**New risk.
Plans being
developed.**

Description:

When we transition from PFPS to JMPS there may be a time where the fleet user will want both JMPS and PFPS on the same laptop, creating a risk to hardware and software system performance. This is a derived requirement stemming from the fact that the users will not be provided separate machines for JMPS and PFPS and there will be features in each that are not available on the other until post JC1 capabilities are provided.

Mitigation Plan Description:

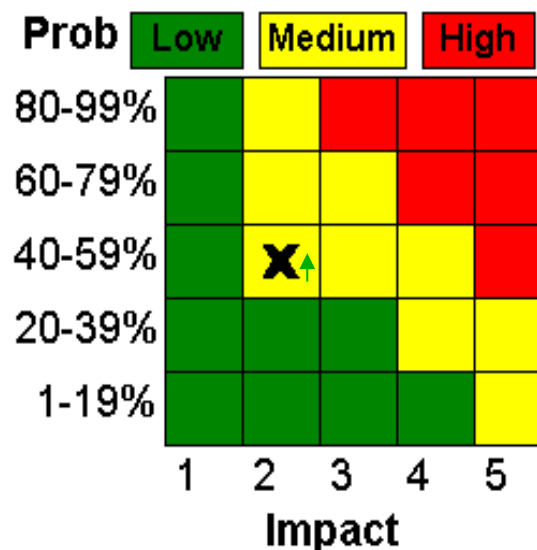
Test various configurations of PFPS and JC1 on the same machine with each release of DII COE and Security components as they become available.

Contingency Plan:

TBD



GCCS-I3 DAL Changes may Impact JMPS Development



Status: **Mitigate**

POC: M Denny/ J Gee/ M Ramirez

Date_Id' 05/23/2002

New risk, based on current activity with the DAL.

Description:

JV1 was designed to function against the January 2002 engineering release of the Data Access Layer (DAL) of the GCCS-M, but changes to the DAL that impact the JMPS-DAL interface have been identified for engineering releases in July 2002 and later. Specifically, the capability to support both the Sybase Enterprise and WebLogic Application Servers will be in the July 2002 release, and Security/Auditing capabilities are planned for possible release in November 2002. If JMPS does not make corresponding changes, JMPS will not be able to use the DAL to obtain Order of Battle threat

Mitigation Plan Description:

NGITNear term tasking

Obtain schedule information for security/auditing changes from DAL developer. Also obtain any available design information to assess extent of impact to JMPS. As of 6/4/02, description of interface changes to be made available for feedback in mid-July, with implementation planned for November 2002 release. Possible engineering builds prior to November 2002.

Identify internal need dates for (1) definition of DAL interface changes (both application server and security changes), (2) preliminary engineering release of DAL containing changes, (3) final engineering release of DAL, based on current JC1 schedule.

Coordinate need dates with DAL developer. Formalize agreement via letter from MAJ Graham/LCDR Hope.

On going activities for government personnel:

1. Keep abreast of the plans/schedules for GCCS-M 4.X DAL development by attending DAL telecons, GCCS-M IICW/Gs IPRs, etc.

Contingency Plan:

Trigger: Major DAL interface change announced beyond NGIT cut off date (TBD)

Develop an alternative path to feeding Order of Battle data into JMPS.



DAL

- **JV1 cannot change to a new version without violating schedule**
- **Key changes in upcoming versions impact JC1 OB implementation**
 - **Jul 02 version - Capability to support both the Sybase Enterprise and WebLogic Application Servers**
 - **Oct 02 - Authentication**

DAL

- **Northrop Grumman IT is working with the DAL developer to identify the changes planned for the Nov 2002 release of DAL**
 - **This version will be the latest for formal DT activities**
 - **The earliest projected fielding for GCCS-M that includes the DAL is June 2004**
 - **Additional changes to the DAL interface between now and fielding cannot be ruled out.**
 - **Impact will have to be addressed with PMA-233**
- **Investigating an alternate path to feeding Order of Battle data into JMPS**
 - **Quiver/LaHabra**
 - **ETIRMS**

Links to SW Development Status

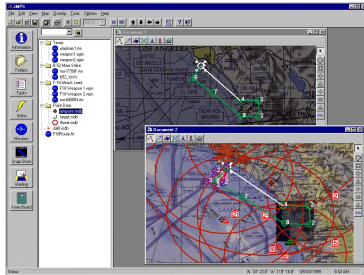
23 July 2002

Route Linking Overview

Description:

Route Linking enables the user to designate fixed points on a route to be linked with another route such that movement of either point in either route will impact the other route. More than one route may share linked points. Example: 77 Function Points, 3265 SLOC

Flight plan aircraft with designated PGM release points with automatic transfer of data from aircraft route to PGM route.

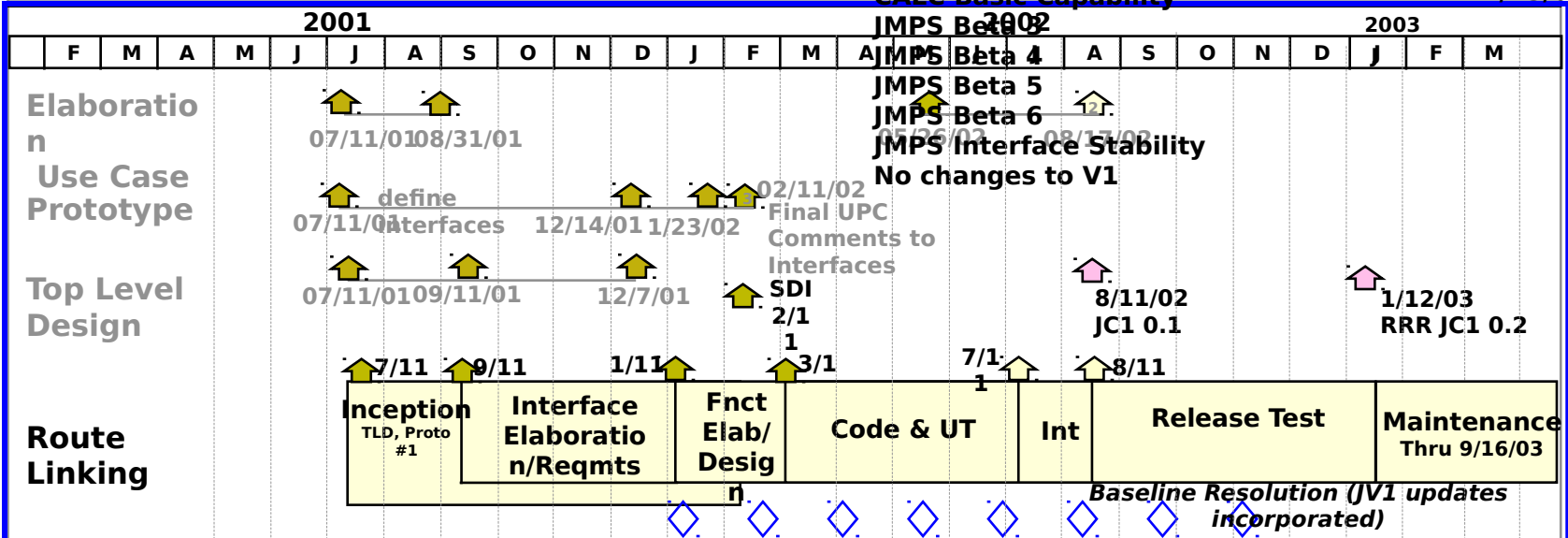


Key Dates:

Requirements 1/11/02 (Complete)
 Design 3/1/02 (Complete)
 Code & Unit Test 7/11/02 (ECD 7/19/02)
 Fully Functional Delivery JC1 0.1: 8/11/02

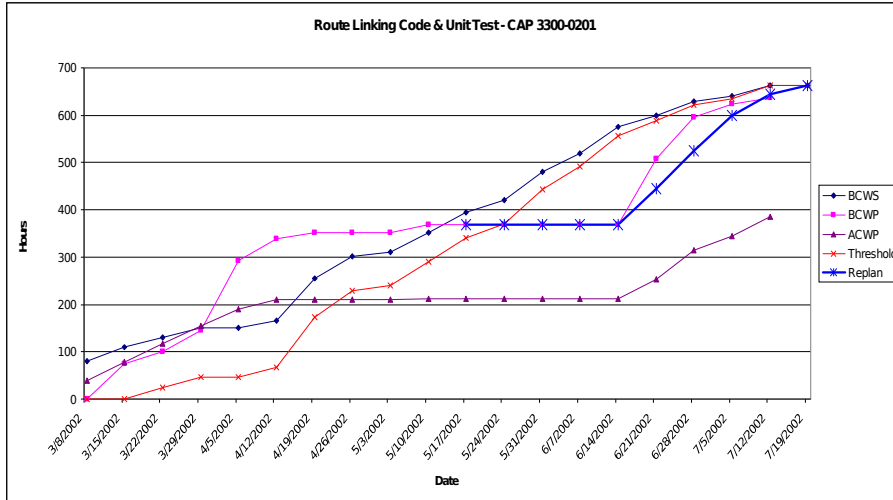
Dependencies:

	JC1 Need	JV1 Availability
	3/1/02	Complete
	1/11/02	Complete
	3/1/02	Complete
	1/11/02	Complete
Security Components	3/1/02	Complete
Route Editor Design	1/11/02	Complete
Route Editor Code	9/11/01	Complete
Graphical Route Editor Design	1/11/02	Complete
Graphical Route Editor Code	3/1/02	Complete
Graphical Route Editor Code	7/15/02	3/27/02
CALC Basic Capability	3/1/02	Acceptable to data
	6/27/03	11/15/02 (OT)



Route Linking Progress Tracking

Code & Unit Test Metric - 96% Complete



Code & Unit Test TPM

- Unit test inspection planned for 7/19;
- CIT procedures completed 7/12; inspection planned for 7/18, execution planned for week of 7/22.

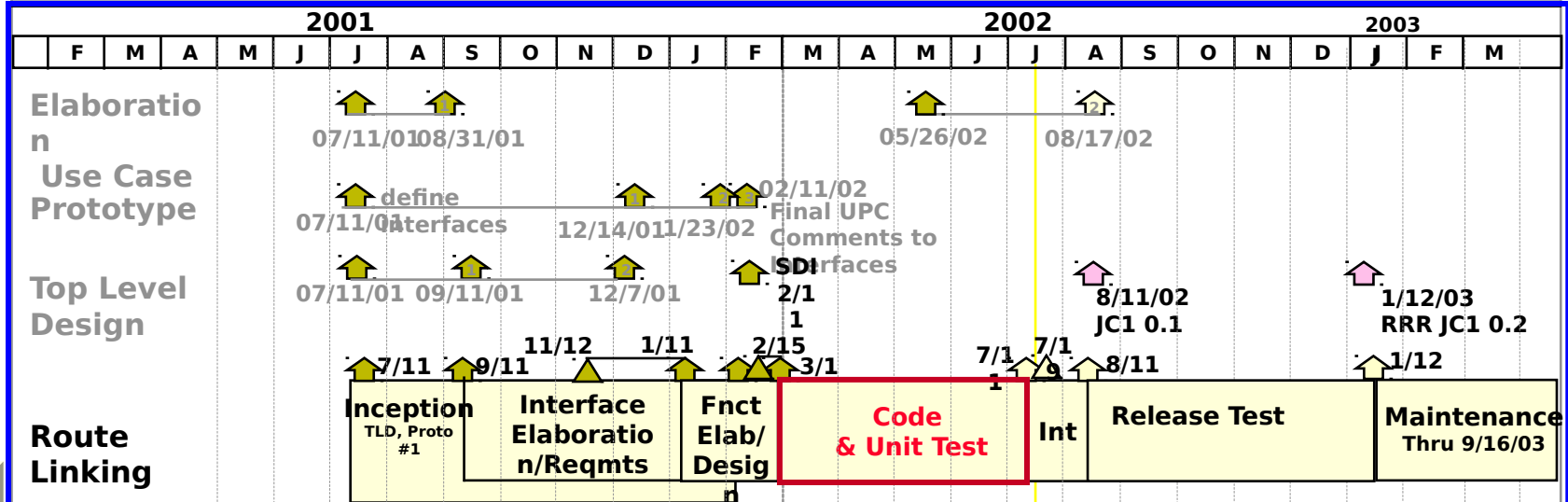
BCWS = 663 hrs

SPI = 0.96 CPI = 1.65

BCWP = 637 hrs

Replan = 645 hrs

ACWP ~ 385 hrs



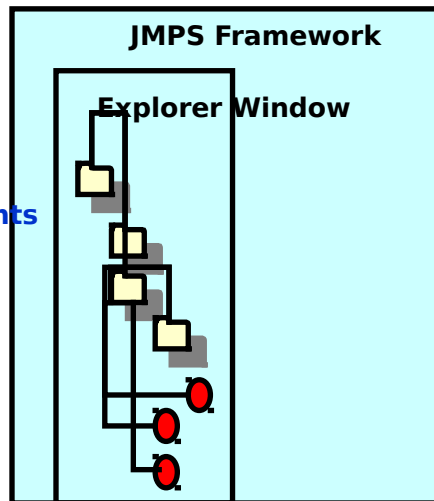
Mission Binder Overview

Description:

Provides users the capability to create mission binders in which to manage and store information specific to their needs.

Example:

UPCs can create custom mission binder structures and receive notifications about specific mission planning events.

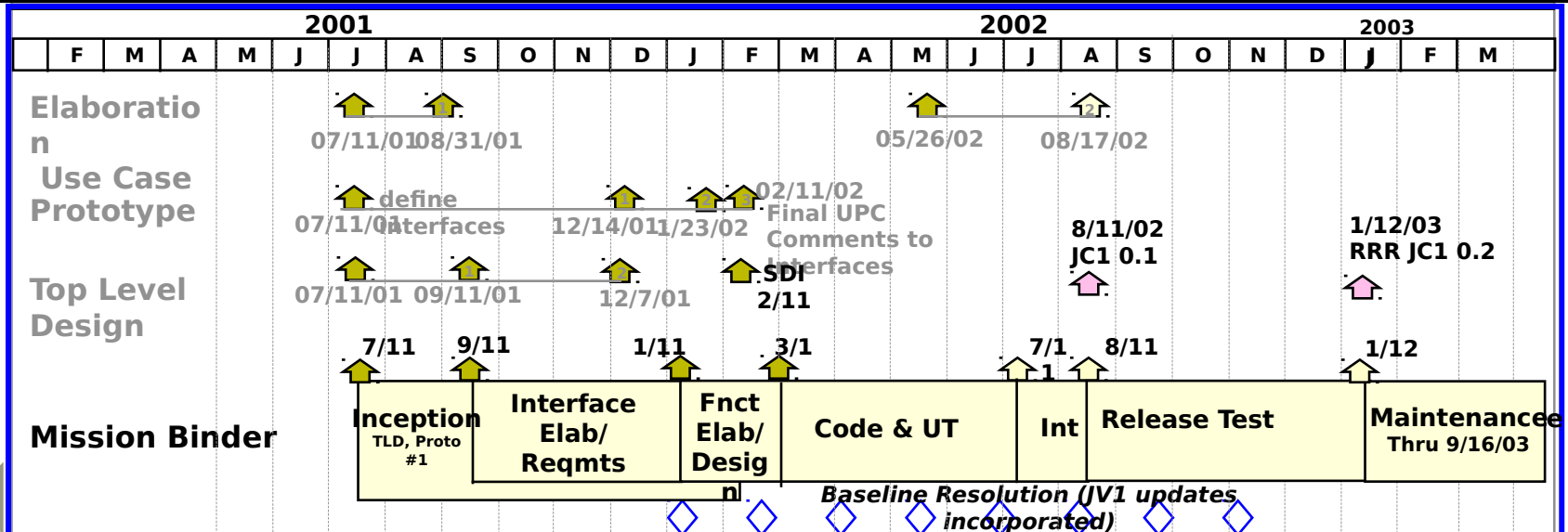


Key Dates:

Requirements 1/11/02 (Complete)
 Design 3/1/02 - (Complete 3/26/02)
 Code & Unit Test 7/11/02 (**ECD 7/26/02**)
 Fully Functional Delivery JC1 0.1: 8/11/02
 Release Test Complete, Delivery JC1 0.2: 1/12/03

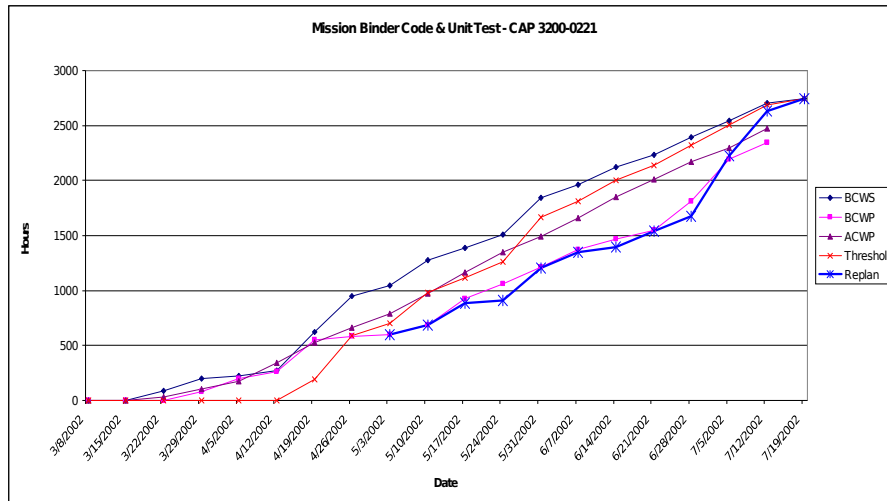
Dependencies:

	JC1 Need	Availability
MB Repository I/F Initial	4/1/02	Complete
MB Repository I/F Framework	6/1/02	Complete
JMPS Beta 3	3/11/02	Complete
JMPS Beta 4	9/11/01	Complete
Security Components	1/11/02	Complete
JMPS Beta 5	3/11/02	Complete
JMPS Beta 6	7/15/02	5/2/02
JMPS Interface Stability	3/11/02	Acceptable to date
No changes to V1	6/27/03	11/15/02 (OT)



Mission Binder Progress Tracking

Code & Unit Test Metric - 86% Complete



Code & Unit Test TPM

- Backup/Archive/Restore code re-inspection completed
- Effort split among three unit test packages: DAA, MB Services, and B/A/R; continue debugging and integration activities; package completion and review expected to complete 7/26
- Concurrently working CIT procedures; estimate completion on 7/19; review next week; execution week of 7/29

BCWS = 2701 hrs

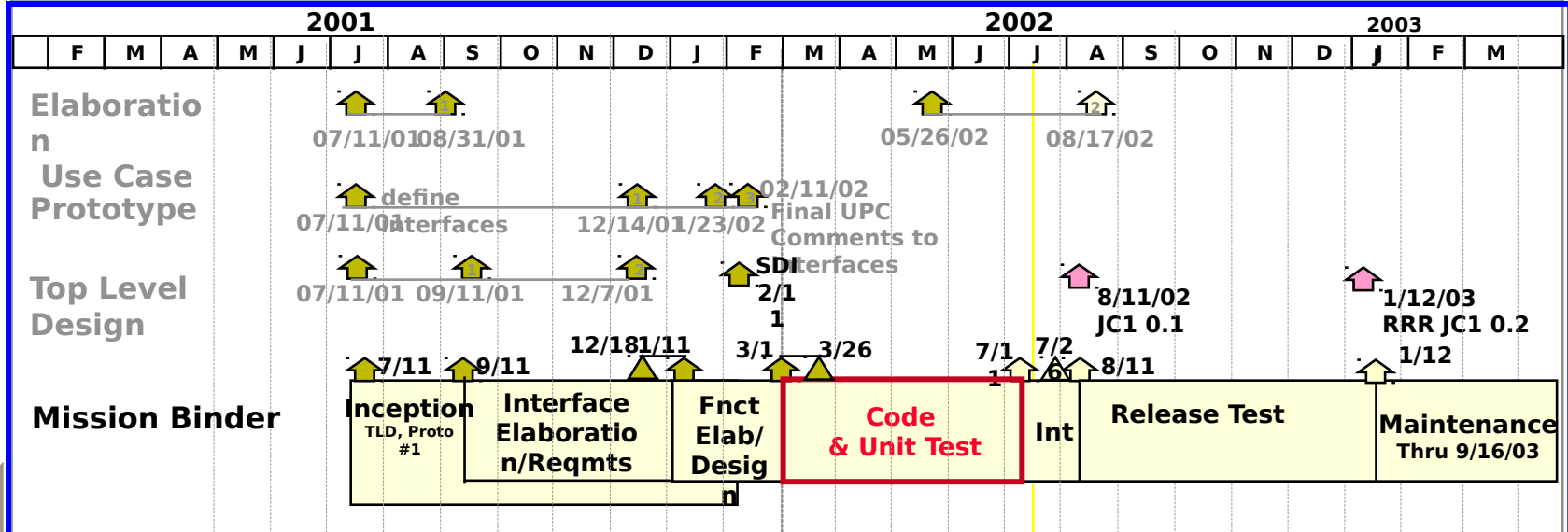
BCWP = 2347 hrs

Replan = 2634 hrs

SPI = 0.87 CPI = 0.95

Replan SPI = 0.89

ACWP ~ 2477 hrs



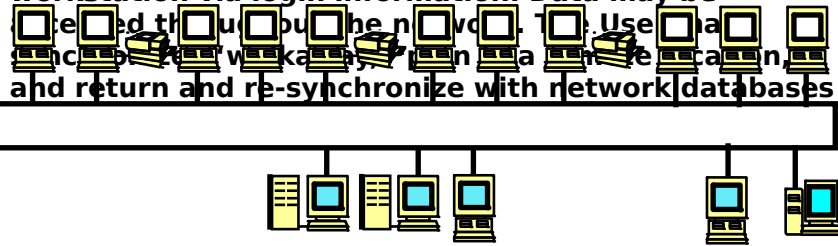
Server / Walkaway Overview

Description:

The Server capability extends the current standalone operation of JMPS to a server / network environment. Walkaway enables remote planning and re-synchronizing.

Example:

The User is recognized by the server on any workstation via login information. Data may be entered through the network. The User may use a workstation to enter data, and return and re-synchronize with network databases.



Key Dates:

Requirements 1/11/02 (Complete)
Design 3/1/02 (Complete)
Code & Unit Test 7/11/02 (Complete)
Fully Functional Delivery JC1 0.1: 8/11/02

Dependencies:

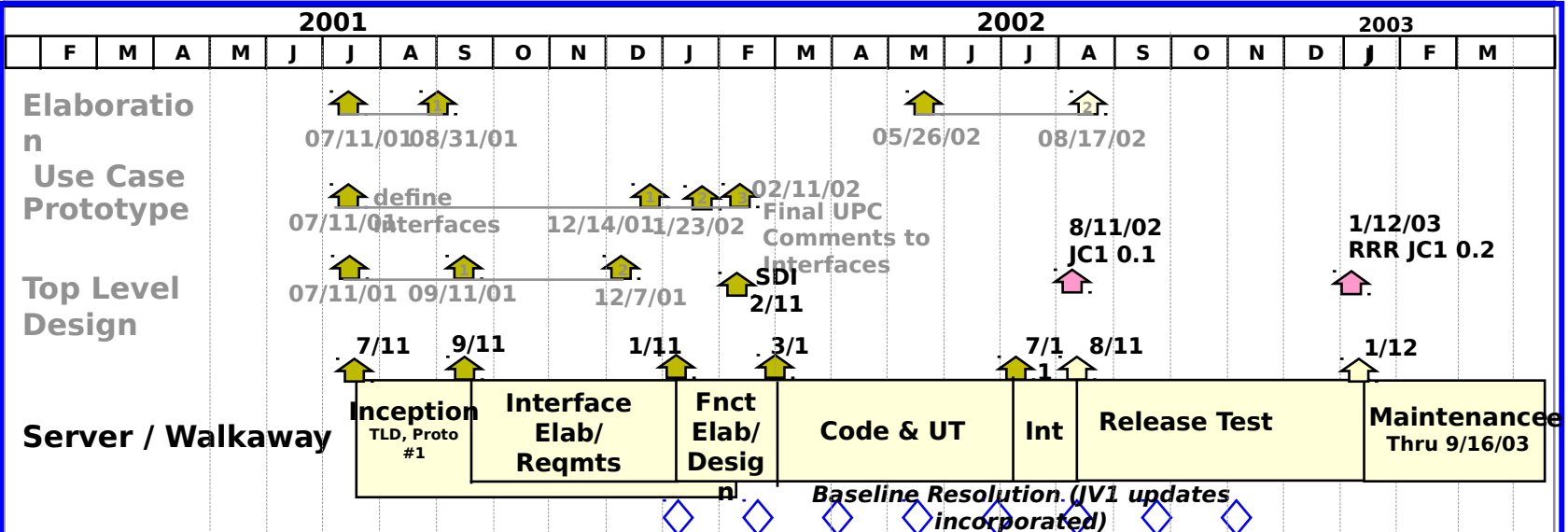
Framework:
JMPS Beta 3
JMPS Beta 4
JMPS Beta 5
JMPS Beta 6
JMPS Interface Stability
Security Components
No changes to V1

JC1 Need

9/11/01
1/11/02
3/11/02
7/15/02
3/11/02
3/11/02
6/27/03

JV1 Availability

Complete
Complete
Complete
~~5/27/02~~
Acceptable data
Complete
11/15/02 (OT)



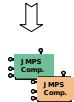
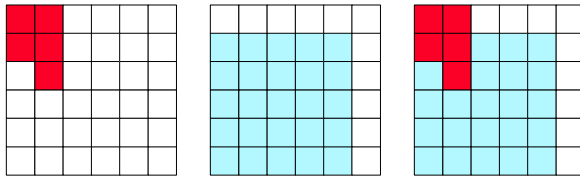
Water Pages Overview

Description:

Elevation templates used to overlay and augment Digital Terrain Elevation Data (DTED) **59 Function Points**

Example: The user can enter a "Water Page" elevation to overlay DTED data that contains a code designating no elevation data is available.

Raw DTED Water Page J MPS View



□ Unspecified Value (large -# in DTED) ■ Elev. from DTED ■ Water Page elev. (user set)

Key Dates:

Requirements 12/31/02 (Complete)
Design 3/1/02 (Complete)
Code & Unit Test 7/11/02 (Complete)
Fully Functional Delivery JC1 0.1: 8/11/02

Dependencies:

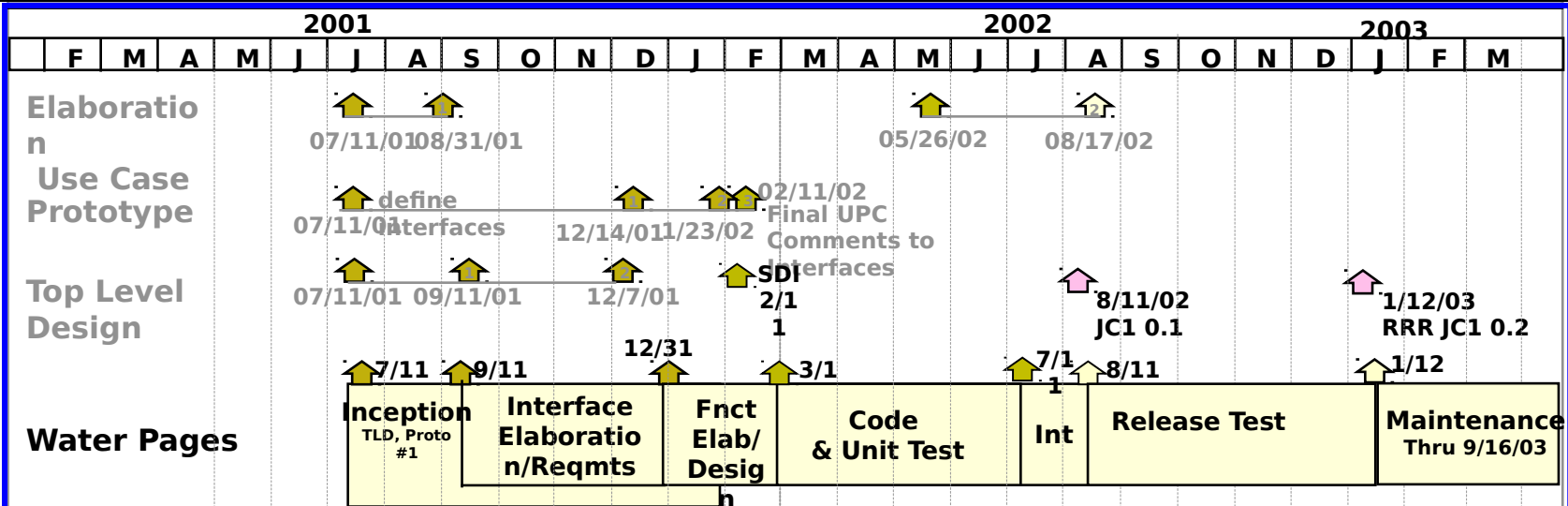
Framework:
JMPS Beta 3
JMPS Beta 4
JMPS Beta 5
JMPS Beta 6
JMPS Interface Stability
Security Components
No changes to V1

JC1 Need

9/11/01
1/11/02
3/11/02
7/15/02
3/1/02
3/1/02
6/27/03

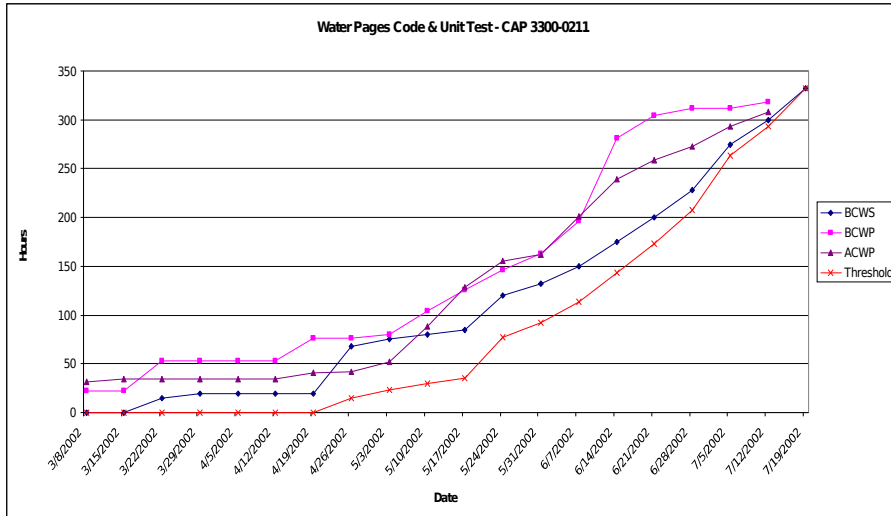
JV1 Availability

Complete
Complete
Complete
~~5/2/02~~
Acceptable to date
Complete
11/15/02 (OT)



Water Pages Progress Tracking

Code & Unit Test Metric - 99% Complete



Code & Unit Test TPM

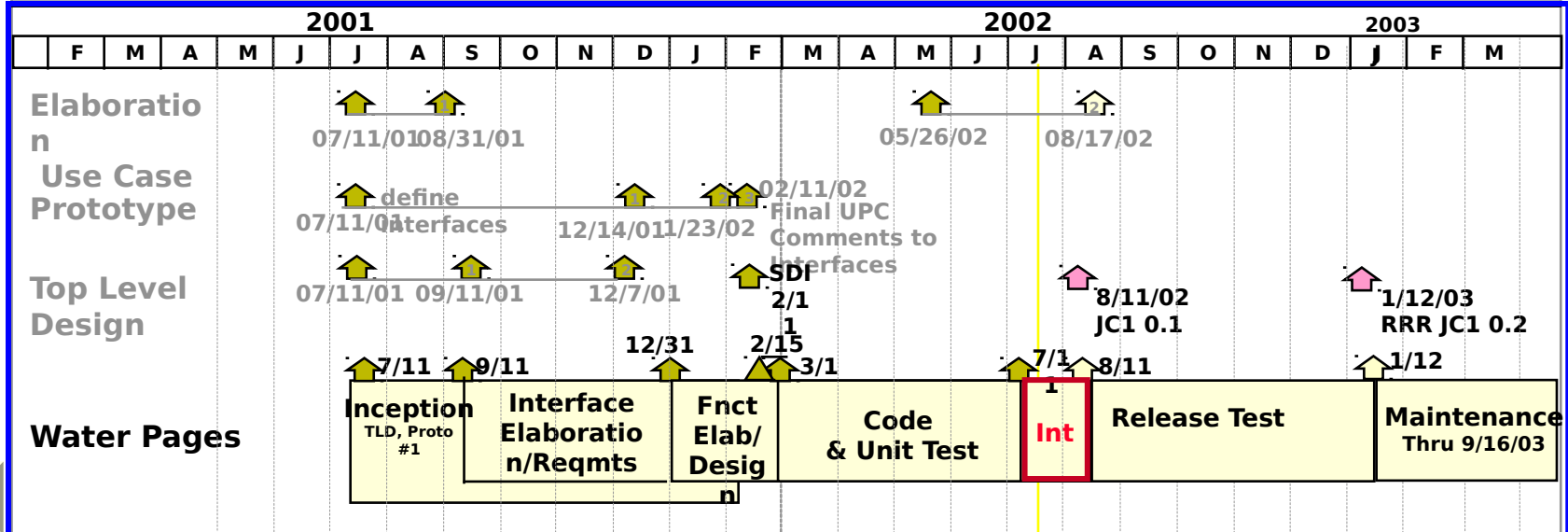
- unit test inspection held 7/11
- CIT procedures completed; review and execution planned for week of 7/22

BCWS = 300 hrs
1.03

SPI = 1.06 CPI =

BCWP = 319 hrs

ACWP = 308 hrs



Standalone JMPS Overview

Description:

Provide one button export/import of the following JMPS data sources:

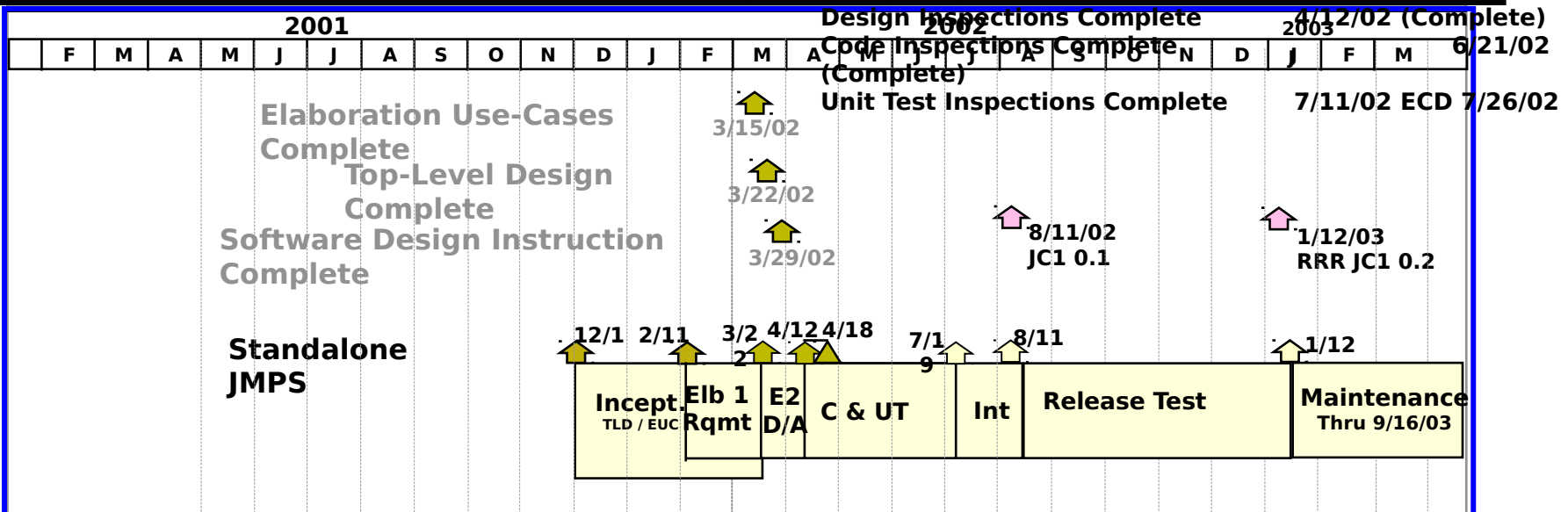
Example: Order of Battle
Weather
Mission Binders

The User can export Order of Battle data from one JMPS workstation and Import that data onto a Standalone workstation in a different area.

119 Function Points
8199 SLOC

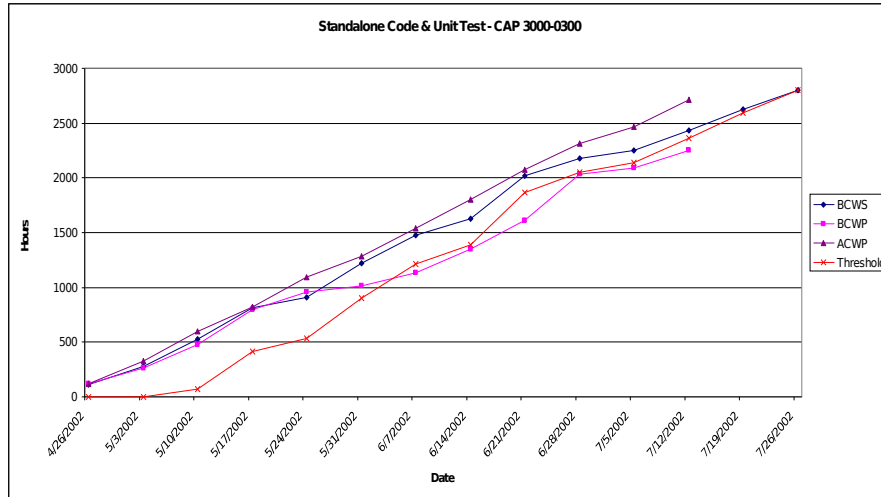
Key Dates:

Elaboration Use-Cases Draft (Complete)	3/1/02
Elaboration Use-Cases Complete	3/15/02 (Complete)
SDI Draft	3/15/02 (Complete)
Requirements Inspections Complete (Complete)	3/22/02
Top-Level Design Complete (Complete)	3/22/02
SDI Complete (Complete)	3/29/02



Standalone JMPS Progress Tracking

Code & Unit Test Metric - 80% Complete



Code & Unit Test TPM

- Code inspections complete
- Working unit testing and package development

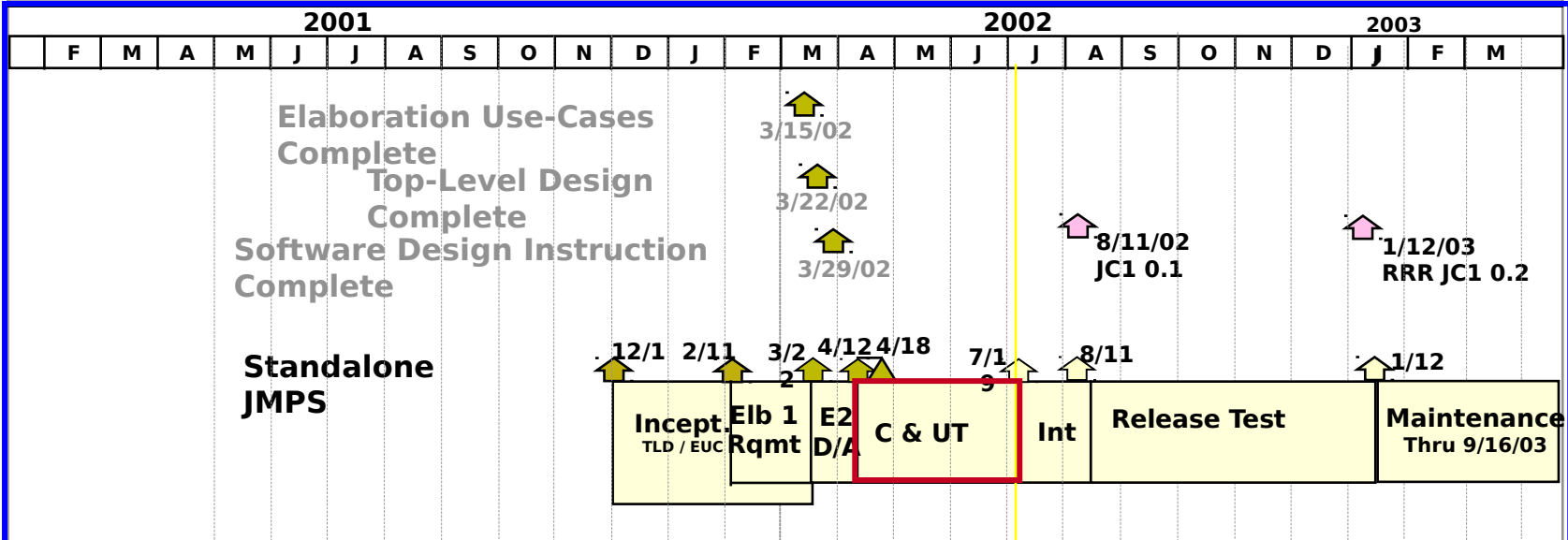
BCWS = 2432 hrs

SPI = 0.93

CPI = 0.85

BCWP = 2250 hrs

ACWP ~ 2714 hrs



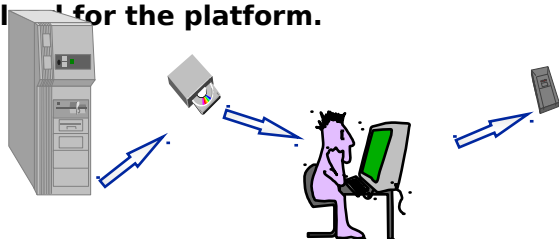
JTIDS Initialization Overview

Description:

JTIDS Initialization provides the user with the ability to store and manage JTIDS/MIDS Initialization Files.

Example: Additional functionality is provided to support the E2C and F14 platform-unique functionality.

Create the JNL initialization load for a particular mission and provide it to the UPC to support creation of the data load for the platform.



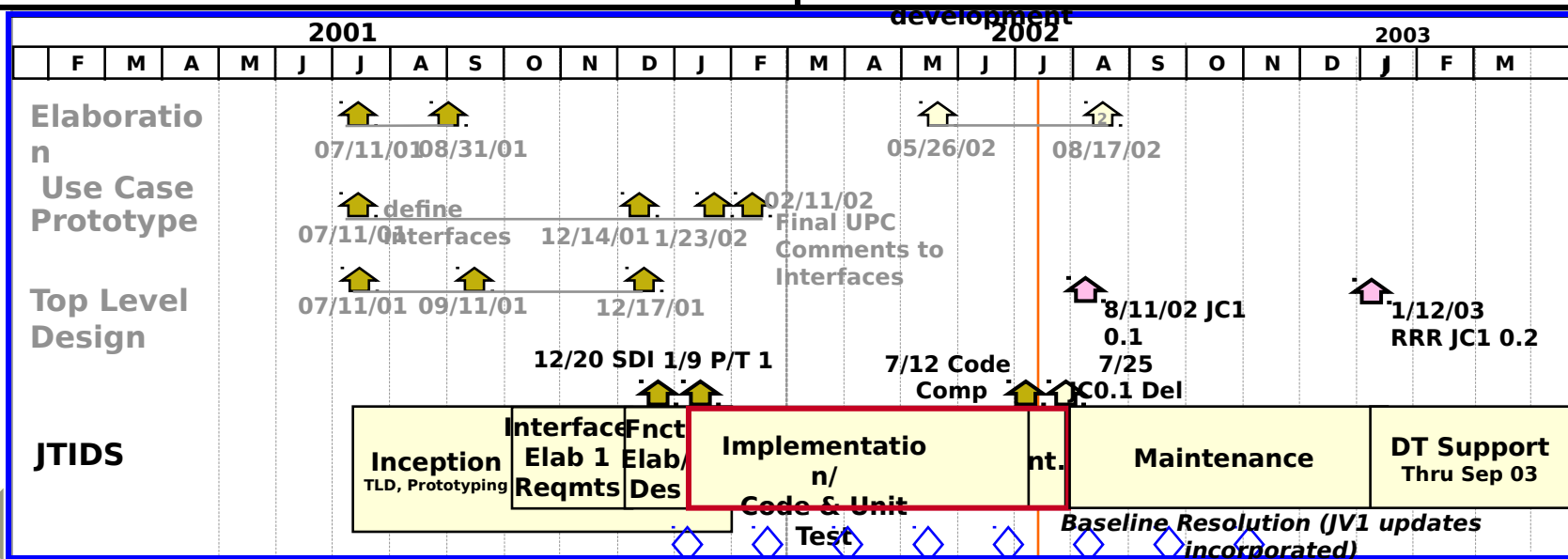
Key Dates:

SW Requirements	12/03/01
Design	01/18/02
C&UT	07/12/02
Integration	07/25/02

Dependencies:

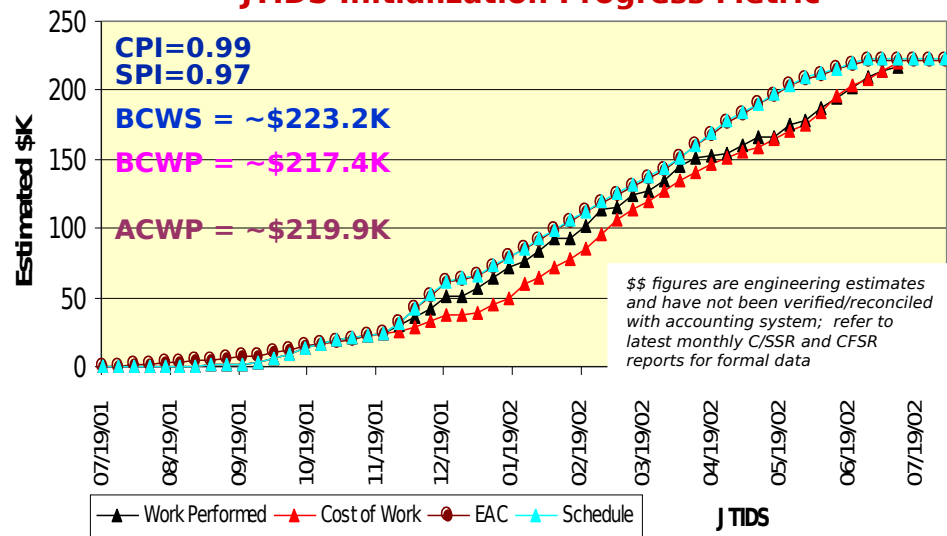
	JC1 Need	JV1 Availability
Security/Error Components	3/1/02	Complete
JMPS Beta 5 NGIT/Sub Components	3/1/02	Complete*
JMPS Interface Stability	3/1/02	Complete*

* Not waiting on any pending Beta 5 components; I/F stability/volatility not currently impacting



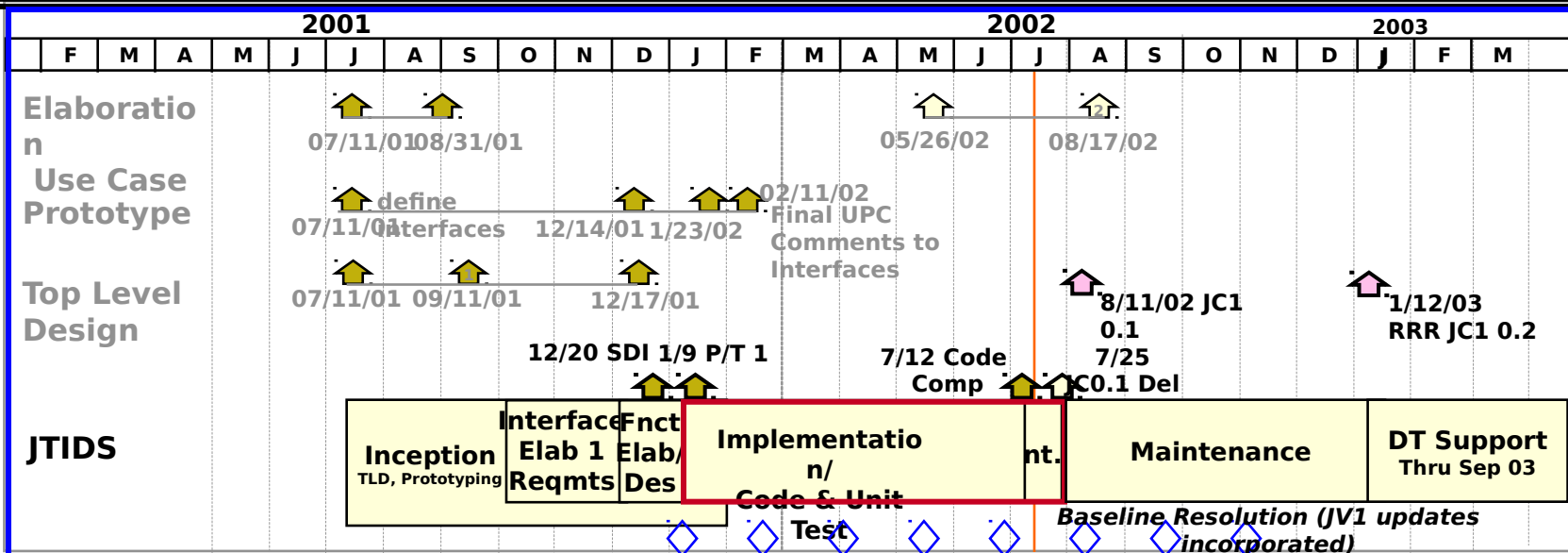
JTIDS Initialization Progress Tracking

JTIDS Initialization Progress Metric



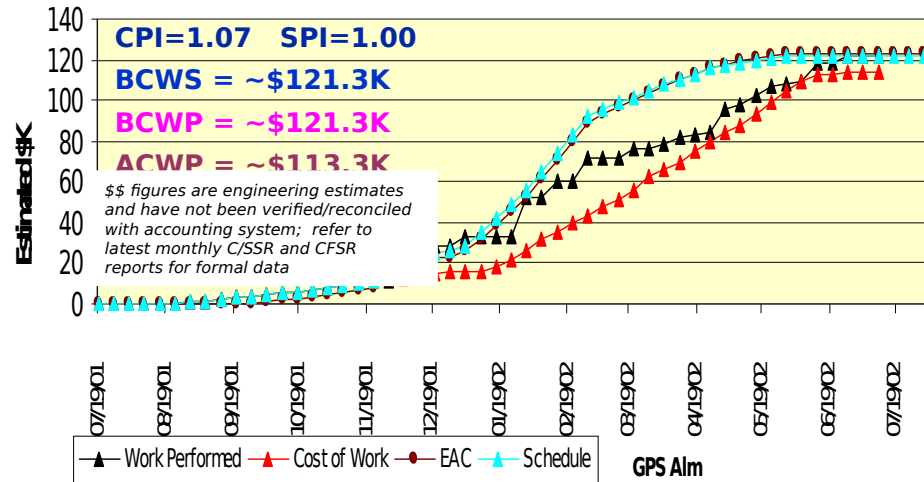
Status of July 02

- Requirements, Design, and C&UT Complete
- Slightly Behind Schedule, No Impact To 0.1 Delivery
 - Final S/W Delivery Expected This Week
 - Completed JTIDS SCTP, Expected This Week



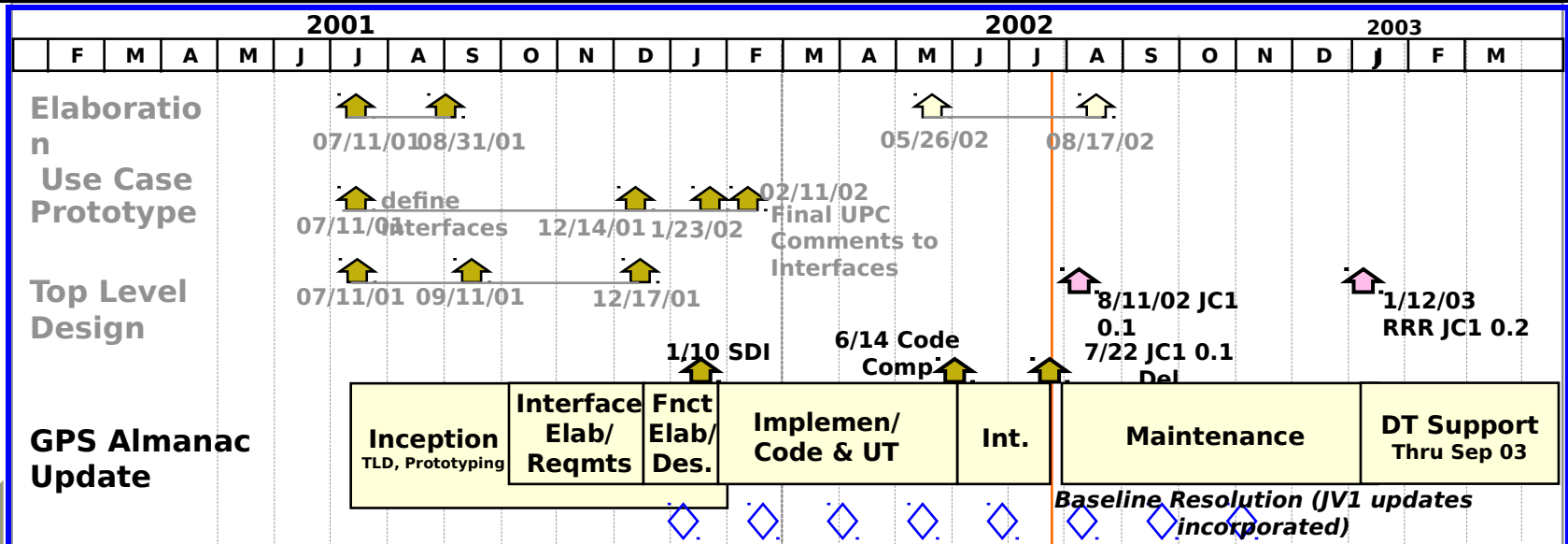
GPS Almanac Update Progress Tracking

GPS Almanac Update Progress Metric



Status as of July 02

- Requirements, Design, and C&UT Complete
- Slightly Behind Schedule, No Impact To 0.1 Delivery
 - Final S/W Delivery Received This Week (7/22)
 - Including Login Credential Protection
 - Completed GPS ADU SCTP Expected This Week



PTW Imagery Interface Development Plan

Description:

- Provides a programmatic interface to support the query and retrieval of the following products for UPC developers:
 - EO, IR, & SAR Imagery (in NITF 2.0 Expanded Format)
 - Automated Target Acquisition (ATA) Images
 - Point Position Information Products (PIIP)
 - Target Area Model (TAM) Images
 - Target Folders with Visual Targeting Aids (VTA) and/or ATA Images
- Supports ATA product generation requests and the exporting of retrieved products to UPC directories.
- Will not provide functional equivalence for the TAMPS Public interfaces related to supporting the JTIM Toolkit GUI (as defined in TAMPS Document No 16008-IDD-6.2.1 Rev A. - June 2000)

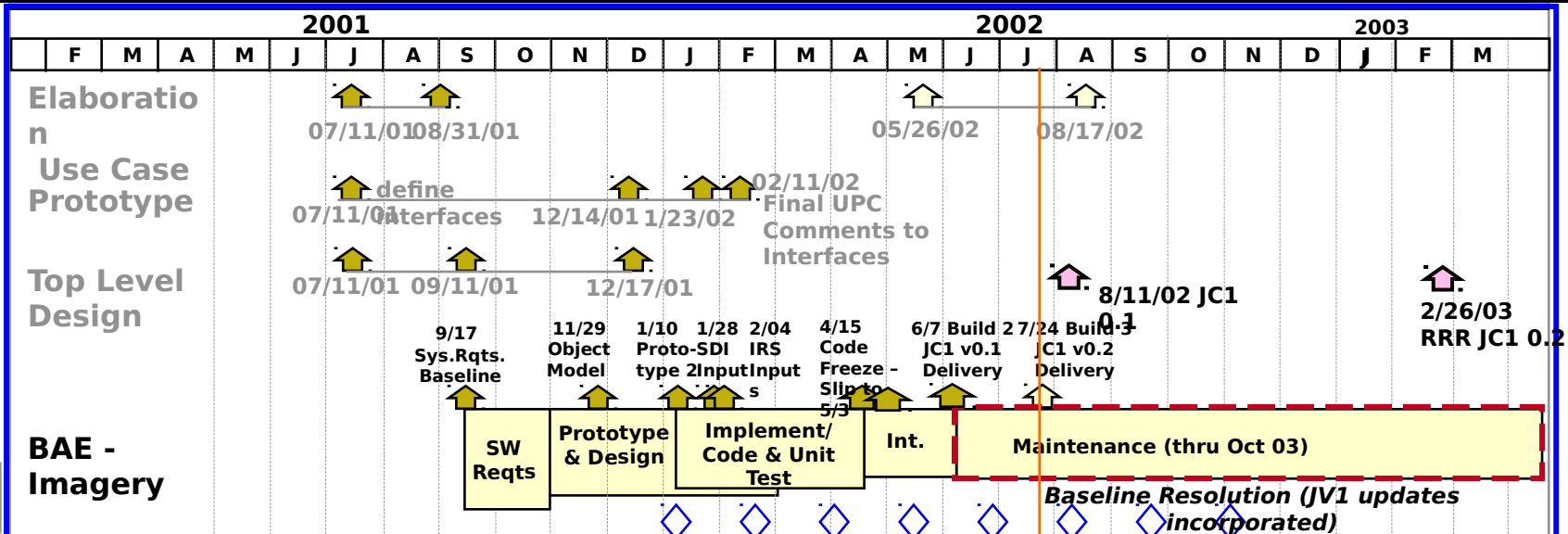
SLOC Estimate: 209(AFP) * 53 LOC = 11,077

Key Dates:

SW Requirements	11/15/01
Design	02/28/02
C&UT	05/03/02
Integration	06/07/02

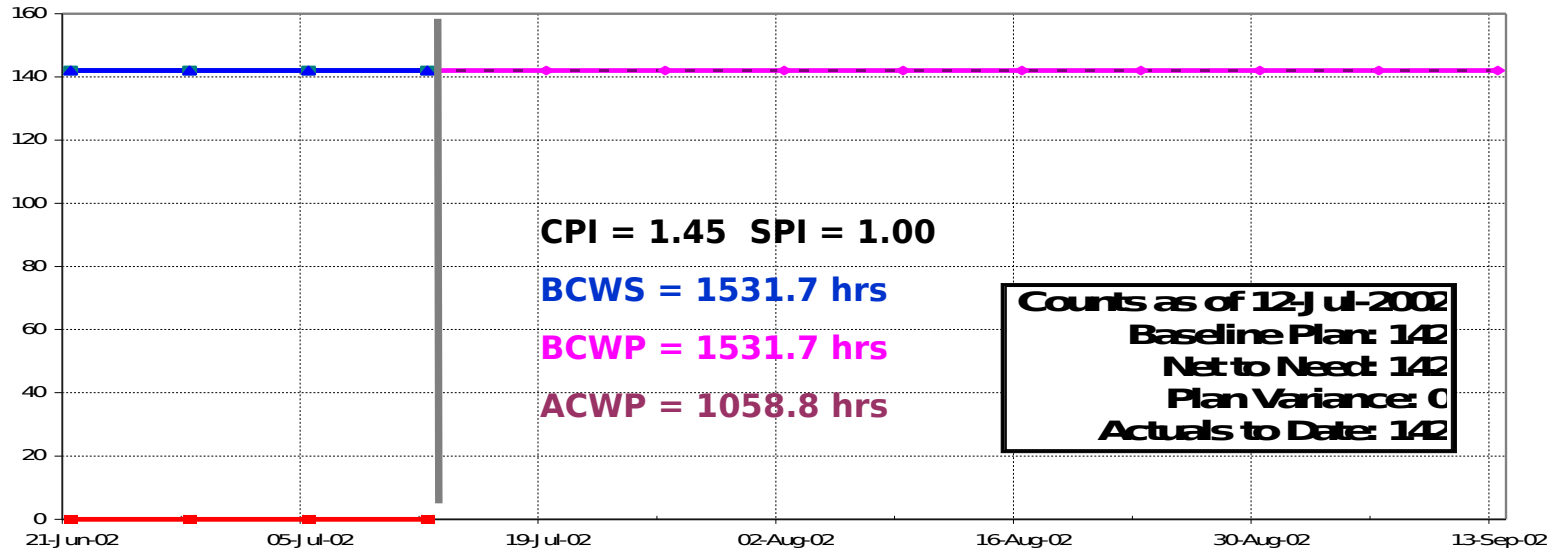
Dependencies:

Configuration Editor Design	JC1 Need 01 Oct 01	JV1 Availability Complete
Configuration Editor Code	21 Feb 02	Complete
Server Side Error Handling Design	21 Feb 02	
Server Side Error Handling Complete		
Server Side Component Code		01 Mar 02
JC1 Test Bed (B5MP1) 95% Stable	15 Apr 02	Complete
JC1 Test Bed (B5MP2) 95% Stable	May 02	Complete



PTW/XML Interface Progress Tracking

XML (KN79) as of 12-Jul-2002



	6/21/2002	6/28/2002	7/5/2002	7/12/2002	7/19/2002	7/26/2002	8/2/2002	8/9/2002	8/16/2002	8/23/2002	8/30/2002	9/6/2002	9/13/2002
Baseline Plan	142	142	142	142	142	142	142	142	142	142	142	142	142
Net to Need	142	142	142	142									
Plan Variance	0	0	0	0									
Actuals to Date	142	142	142	142									
Forecast				142	142	142	142	142	142	142	142	142	142

Component Activity

- Task Completed



Weather Interface Development Plan

Description:

- Provide UPC access to current and forecast weather data
- Provides a programmatic interface to support the query and retrieval of current and forecasted weather data
- Includes a local caching to support rapid responses to weather data requests
- Supports loading climatology data from CDs or downloaded disk files into the JMPS climatology database.
- Differs slightly from TAMPS, which currently loads climatology data from 8mm tape.
- Specific climatology data supported consists of the Upper Air Gridded Climatology (UAGC) datasets available from Fleet Numerical Meteorology and Oceanography

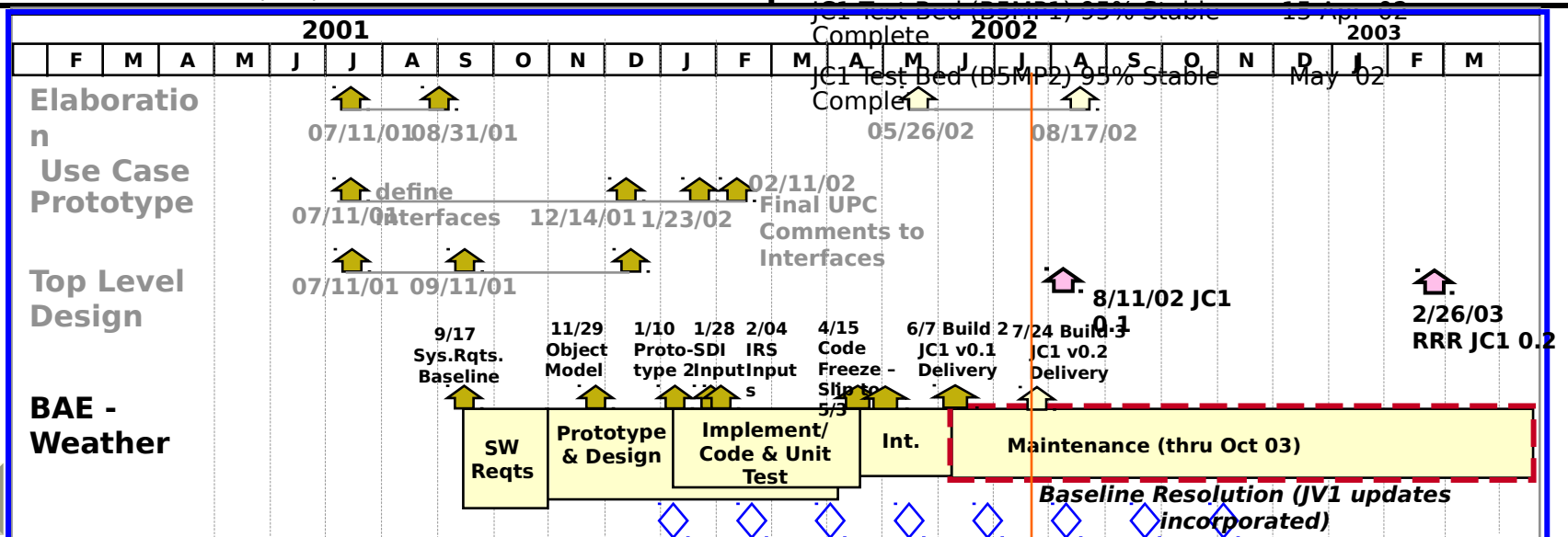
Key Dates:

SW Requirements	11/15/01
Design	04/02/02
C&UT	05/03/02
Integration	06/07/02

Dependencies:

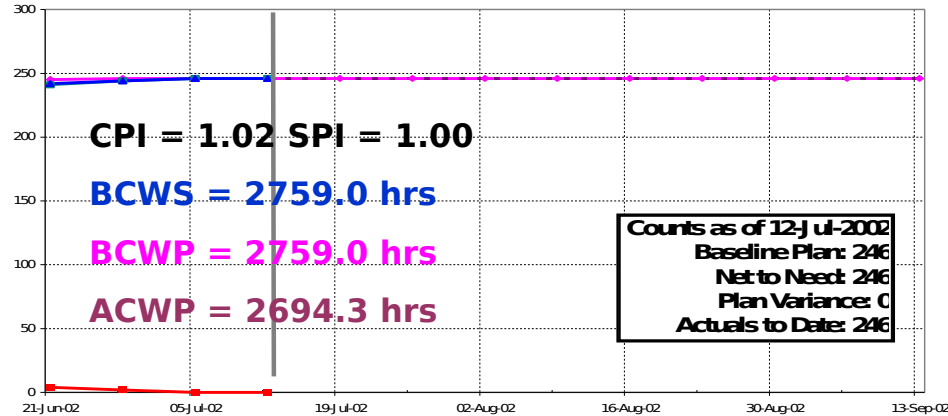
	JC1 Need	JV1 Availability
Configuration Editor Design Complete	01 Oct 01	
Configuration Editor Code Complete	21 Feb 02	
Server Side Error Handling Desig Complete	21 Feb 02	
Server Side Component Code Complete		01 Mar 02

SLOC Estimate: 93(AFP) * 53 LOC = 4,942



Weather Progress Tracking

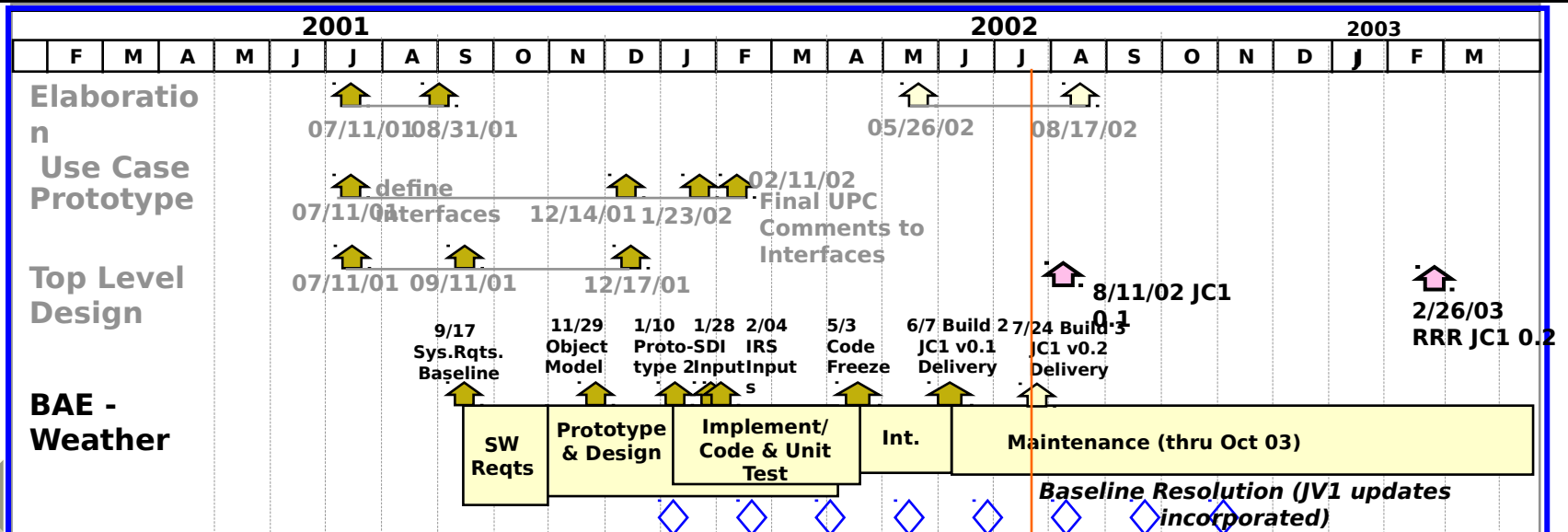
WXI (KH55) as of 12-J ul-2002



Status as of July 02

- Development Effort Complete
- Awaiting Contractual Direction for H/S

	6/21/2002	6/28/2002	7/5/2002	7/12/2002	7/19/2002	7/26/2002	8/2/2002	8/9/2002	8/16/2002	8/23/2002	8/30/2002	9/6/2002	9/13/2002
Baseline Plan	245	246	246	246	246	246	246	246	246	246	246	246	246
Net to Need	241	244	246	246									
Plan Variance	4	2	0	0									
Actuals to Date	242	244	246	246	246	246	246	246	246	246	246	246	246
Forecast	246				246	246	246	246	246	246	246	246	246



SPF Interface Development Plan

Description:

• Provides UPC access to the Strike Planning Folder (SPF)

- Provides ability to store and coordinate strike data, including the ability to access, view, and use information associated with the entire Strike Planning process.

- Primary interface will be through a network access application (an Internet browser, for example) that supports Java (version 1.2 or above).

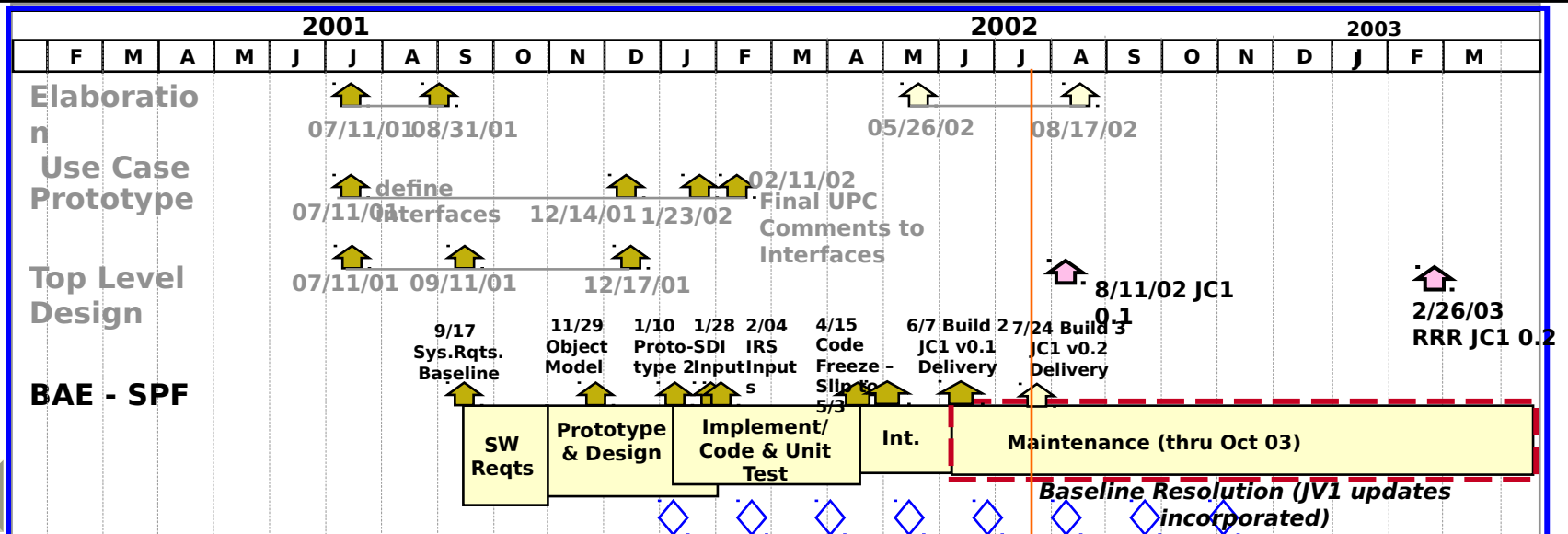
SLOC Estimate: 21(AFP) * 53 LOC = 1,135

Key Dates:

SW Requirements	11/15/01
Design	02/05/02
C&UT	05/03/02
Integration	06/07/02

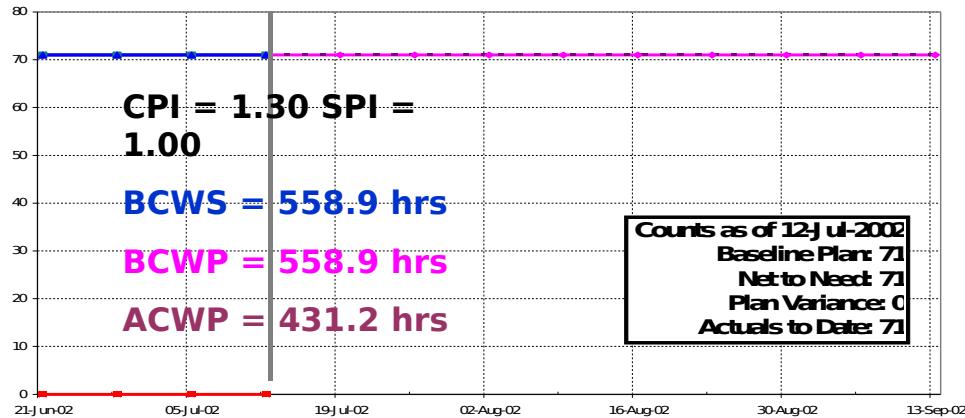
Dependencies:

	JC1 Need	JV1 Availability	
Configuration Editor Design	01 Oct 01	Complete	
Configuration Editor Code	21 Feb 02	Complete	
JC1 Test Bed (B5MP1) 95% Stable	15 Apr 02	Complete	
JC1 Test Bed (B5MP2) 95% Stable	May 02	Complete	



SPF Interface Progress Tracking

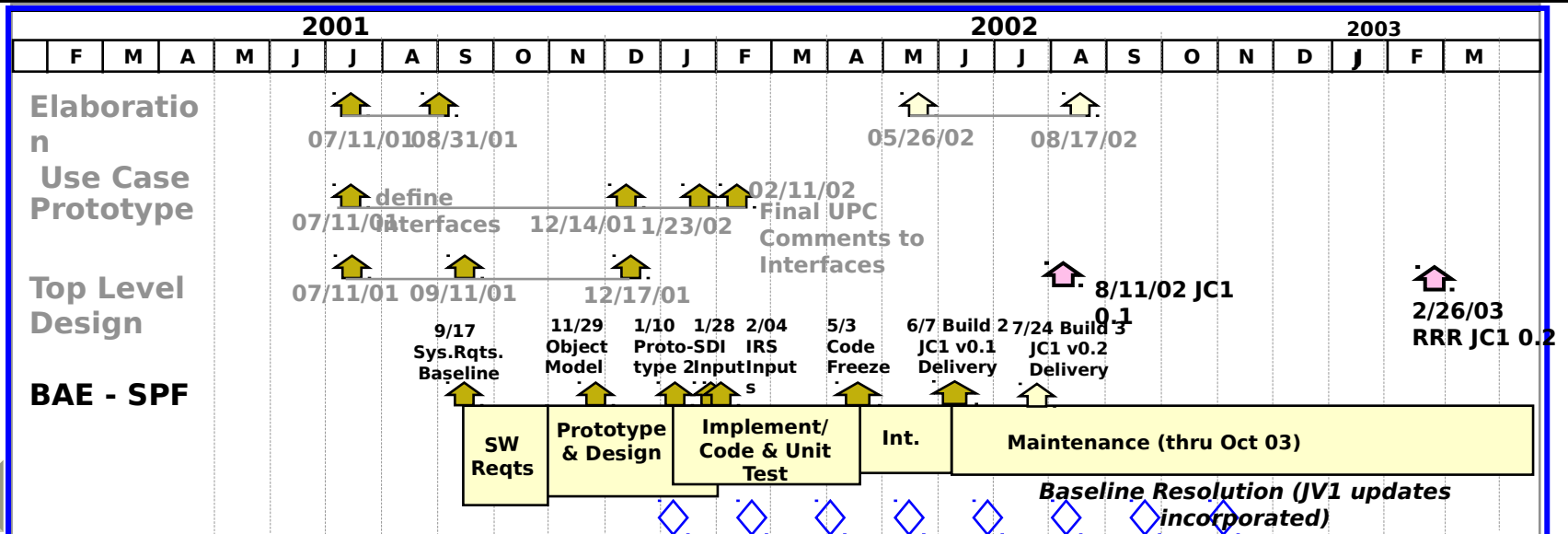
SPF (KH56) as of 12-J ul-2002



Status as of July 02

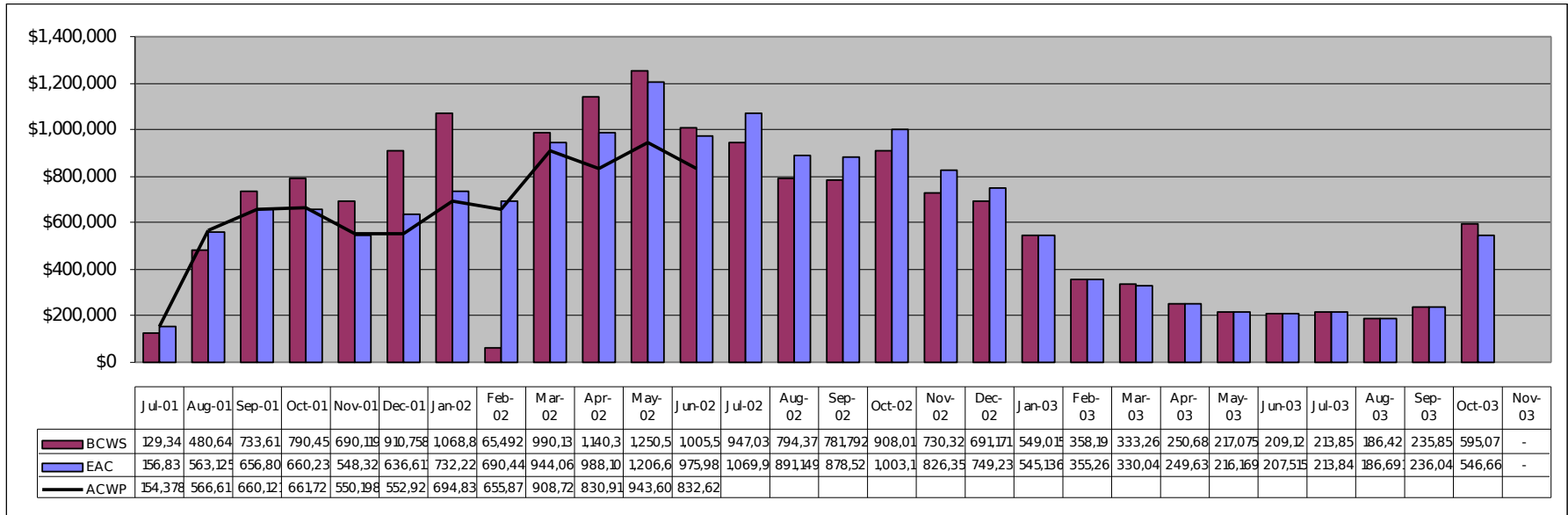
- Development Effort Complete

	6/21/2002	6/28/2002	7/5/2002	7/12/2002	7/19/2002	7/26/2002	8/2/2002	8/9/2002	8/16/2002	8/23/2002	8/30/2002	9/6/2002	9/13/2002
Baseline Plan	71	71	71	71	71	71	71	71	71	71	71	71	71
Net to Need	71	71	71	71	71	71	71	71	71	71	71	71	71
Plan Variance	0	0	0	0									
Actuals to Date	71	71	71	71	71	71	71	71	71	71	71	71	71
Forecast													



JC1 Total Program Expenditure

All WBS Elements. June CPR. MR not shown in Graph



Northrop Grumman Cost Elements Cost

1.0 Program Management	\$2,189,927
2.0 Systems Engineering	\$2,824,990
3.0 Software Development	\$3,058,152
4.0 Developer Support	\$670,763
5.0 Product Assurance	\$532,107
6.0 Test and Evaluation & Maintenance	\$1,409,275
7.0 PGMPs Study	\$107,848
9.0 Boeing	\$1,292,174
10.0 BAE	\$4,437,926
12.0 ODCs	\$633,802
MR	\$1,347,122
UB	\$18,604,246
	\$100,158

Total Total Expenditure Summary

• As of June 2002

• CPI: 1.12
• SPI: 0.97

JC1 Actuals and Commitments vs Funding

As of 6/28/02: 72% Expended (including T/L & Commitments)

